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of Chemistry and Industry

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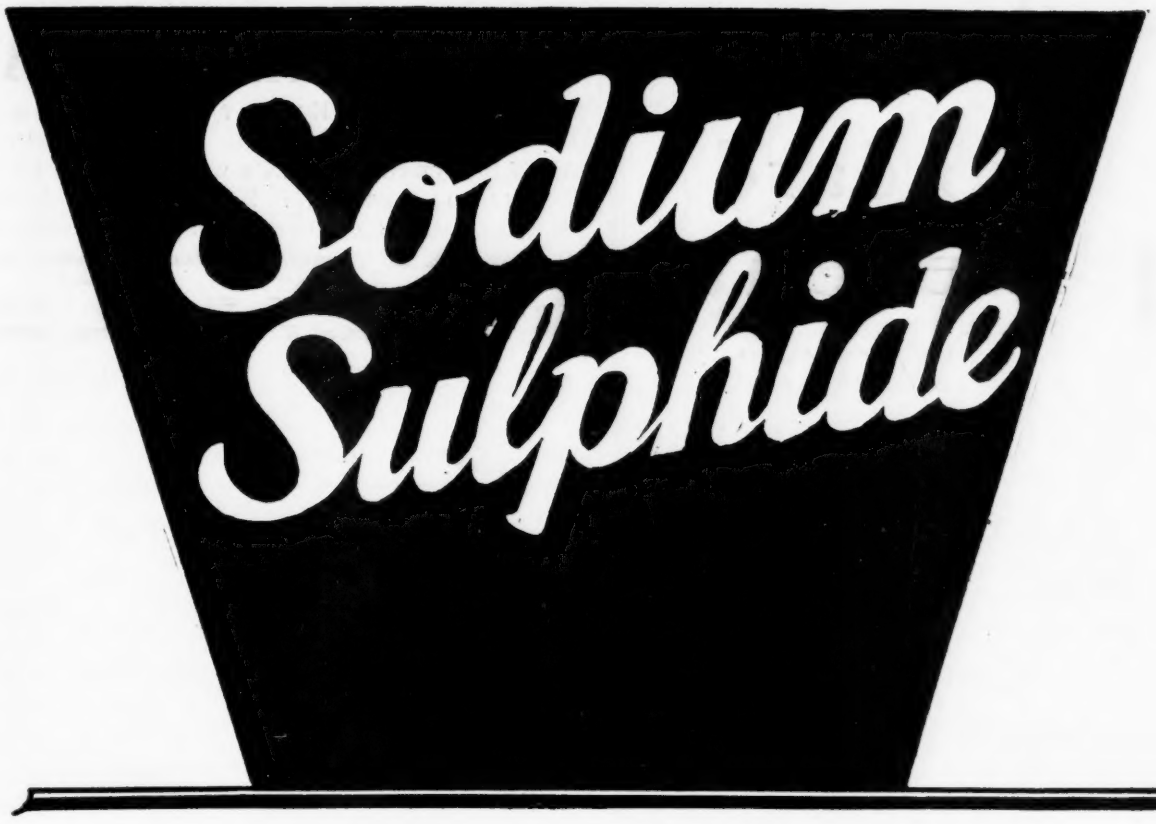

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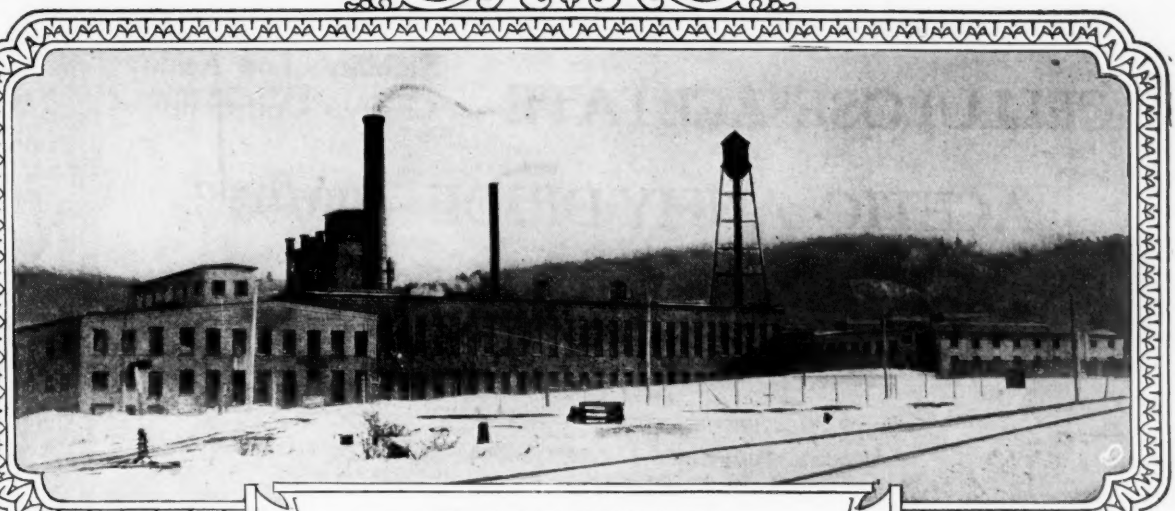

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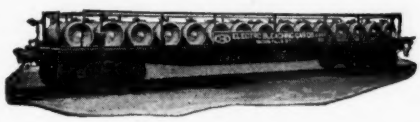

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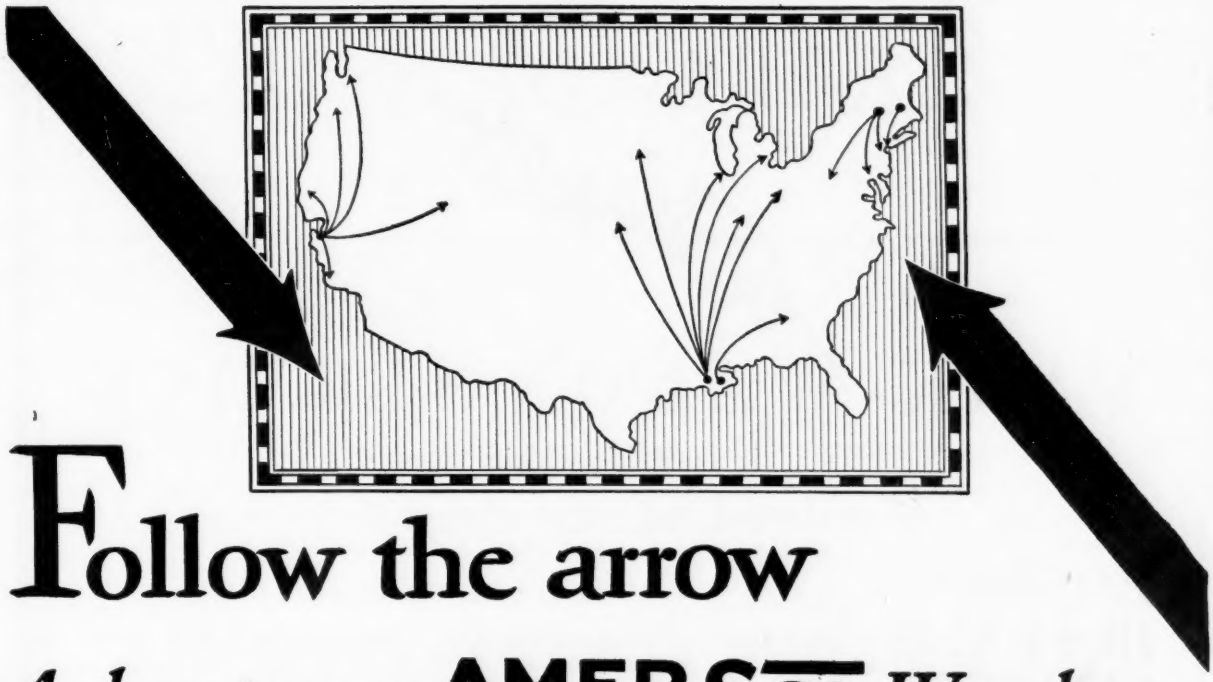

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CHEMICAL MARKETS

VOL. XX NEW YORK, MARCH 10, 1927 NO. 10

The Next Decade

GREAT chemical discoveries in the past have been personal achievements. Gifted chemists of vision and patience, toiling almost unaided, have painstakingly hunted out chemical secrets. Especially during the last quarter of the past century a great mass of inductive chemical facts were piled up, a rich storehouse upon which, since 1900, the rapidly expanding chemical industries have been drawing.

TODAY, our chemical discoveries are the results of directed, organized research. In elaborate laboratories, fitted with every modern appliance, reinforced by libraries in which are stored all the accumulated chemical experience of the past, corps of chemists, each a specialist working on some particular part of a general problem which he often but dimly appreciates, are besieging chemistry.

THE chemical fields of discovery are no longer tilled by the ox-drawn plough. A motor driven disc cultivator, cutting a swath of furrows twenty feet wide, ploughs across section after section. Thoroughness and speed are the result. For twenty-five years coal-tar was commercially exploited and, of course, its ultimate possibilities have not yet been sounded. But within the past decade alone we have made cellulose into both artificial silk and lacquers which have already developed tremendous markets. Synthetic ammonia is a chemical baby in years; in stature, a giant.

TWENTY-FIVE years ago who would have suspected that petroleum, having made a fortune out of the kerosene can, would make another, greater fortune out of the gasoline tank, with a still greater fortune in the future? Yet, thanks to organized research, there are a number of sane chemists and substantial industrialists who do not hesitate to forecast a yearly market of one hundred million dollars a year for solvents to be extracted from petroleum bases. Iso-propyl-alcohol and secondary butyl acetate are but promises of the chemical exploitation of this petroleum as Vaseline and Nujol were the forerunner of Flit and Wyrol in the patented, branded merchandising of petroleum products to the general public.

COAL and oil are historic chemical raw materials, but organized research is exploiting other sources. What does the future hold for cellulose? Our alcohol industry, if the research of the sugar laboratories keep their promises, will not be the only branch of commercial chemistry built on a cane or beet foundation. Coumarin and camphor will not be the only chemical products of turpentine. Corn is more and more a chemical starting point, and the humble cottonseed is already famous. Is it unreasonable to expect that all of our great staple products, from mine, forest, and farm, will sooner or later be tapped for chemical sources? Is any man brave enough to hazard even a guess at the chemical industry's expansion and ramification during the next decade?

SELLING COSTS

Today when competition has forced profits to a low point, executives of chemical manufacturing concerns are probably more intimately acquainted with the why and wherefore of costs than at any time since the war. Almost daily, they are forced to consider their own costs in the terms of competitive prices.

When the lower prices of a competitor are made possible by by-product sources of supply that can be utilized at almost any price, it is folly to meet this price as the by-product goods will be sold no matter what is received for them. But when a manufacturer obtaining his goods in much the same manner names a lower price, then the time has come for investigation.

The cost of any product naturally resolves itself into two distinct parts—the cost of manufacture and the cost of selling. These two parts are inherent in any cost. Raw materials, capital investment, plant deterioration and upkeep, labor, packing, and all other expenses necessary to put the product f. o. b. the plant—these make up the manufacturing part of the cost. The sales part of the cost consists of distribution, maintaining stocks in warehouses, equalization of freights, as well as salesman and promotion work.

It is sales costs that are the unsettled problem today. It is quite easy for makers accurately to determine the manufacturing part of the costs, but the increasing demands for service on the part of buyers and the expense of personal sales efforts fluctuate widely. A recent survey of selling costs among manufacturers selling industry conducted by the Engineering Advertisers Association of Chicago reveals variations from 4 to 32.44 per cent. Especially within the chemical industry is more definite data necessary in order to analyse selling expenses more intelligently with the view of seeing to it, first that all proper sales costs are rightly allocated, and second, to discover how the general distribution expense—admittedly too high—may be lowered.

CHEMICAL INVESTMENTS

Heavy depreciation appearing on the books of chemical manufacturing companies is one of the necessary items that must be taken seriously if any chemical company is to continue long in business. Large dividends are attractive and nothing so stimulates the market value of a stock. But fair dividends are much better in the end as prices of many safe and sound industrials will prove. Where the business of a concern is based upon a process, the concern is wise to make their plant depreciation as large as possible and also to carry their process valued at nothing. For processes can rapidly be supplanted and plants suited to one process cannot always be used for another without great expense.

The chemical business is not one in which a manufacturer can engage and quietly sell the same product made by the same process for the same price year after year. Underlying basic changes known to those operating in the industry years ahead, cause serious changes in the value of chemical securities over a long period. Reading the balance sheet of a chemical concern will tell the investor something, but the average investor is far from sufficiently educated in things that are chemical in industry to appreciate fully just what it is all about.

This is an era of good business and very few chemical manufacturers exist that are not making money and paying dividends despite the changing conditions and the increasing competition. Here and there in some branches, such as in dyes where competition has been of long duration and extremely ruthless with no apparent reason, earnings have been small. But on the whole profits have been large and are steadily improving.

Chemical consumers have much to be thankful for. This year as for some years past, presents firm steady markets free from speculation and shortages. What more could a consumer desire? It makes no difference to a consumer what he pays for his raw materials as long as his competitor is paying the same thing. A contract naming a price which the consumer will pay, unless he pays less, gives him nice definite methods for figuring his selling costs of his products.

A chemical exposition without any chemical exhibits is like playing Hamlet without the noble Prince, and now that we are to have the opportunity of comparing American chemical progress directly with exhibits of foreign chemical manufacturers, it is to be devoutly hoped that the leaders of the American chemical industry appreciate better than they have in the past the educationl opportunity which the Exposition affords.

[*Ten Years Ago*]

(From Drug & Chemical Markets, March 7, 1917)

Sulfuric acid, 66 degree, is offered at $33 a ton, the higher price being due to higher brimstone. Pyrite acid is held at $28.

Crude sulfur has been advanced from $29, a ton New York, to $35, on domestic business and $45 for export.

National Chemical Co., Ltd., with offices in Chicago, capitalized at $1,250,000, will manufacture potash and by-products from kelp, on Queen Charlotte Island, B. C.

Barrett Co. earnings in 1916 were close to 40 per cent on common compared with 21 per cent in 1913, after paying preferred dividend.

Sodium bichromate has advanced to 17c per pound inside, and offerings up to 21c, owing to scarcity.

A Market Survey of Synthetic

NITROGEN

Production, Actual and Projected

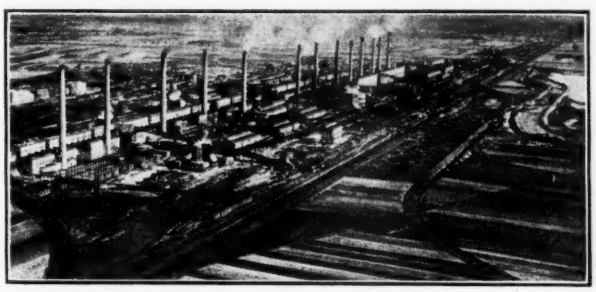
June first the Chilean nitrate producers return to "free selling"—an outward and visible sign of the breaking up of the strong Nitrate Association, under the competitive pressure of synthetic material. Nitrogen fixation is a commercial fact; not a chemical theory. Obviously, we are on the edge of still further developments, not only in increased output of synthetic ammonia; but of its diversion also into new fields through new compounds. The Editors.

Due to the fact that our by-product production of sulfate of ammonia from coke ovens and gas works is already sufficient to give us an exportable surplus at figures, which the advancing price of sulfuric acid, make it uneconomic to turn our synthetic ammonia into fertilizer; our domestic synthetic ammonia production has almost wholly been marketed in the anhydrous form. As a result ammonia prices have tumbled precipitously and competition is of a keenness that has set the manufacturers looking for other ammonia outlets.

There have been repeated rumors that one large producer was going into sal ammoniac heavily, although the market in the radio field has been somewhat restricted by the so-called B battery eliminator. It is predicted that the Peoria plant, since they have by-product carbon dioxide available, may undertake the manufacture of synthetic urea; and that the tidewater position of the proposed Allied plant may mean the production there of ammonium phosphate.

Ammonia Market Prospects

It is generally conceded that fixation in the United States is in such shape as to assure low priced ammonia for some years to come and to force its diversion into other compounds. As the fertilizer outlet here is not now tempting, there will doubtless be some new and highly interesting developments in this market during this year and

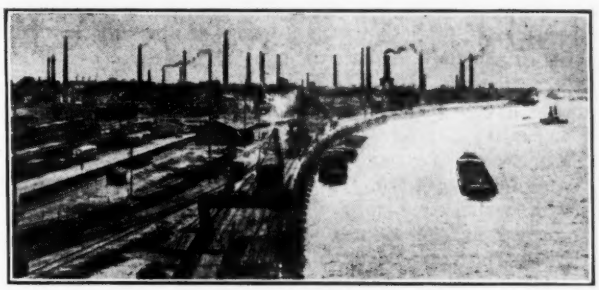


B. A. S. F. Ammonia Works at Merseburg

next, especially if the two big plants now completed, but not yet on the market, come into production.

In this connection it is interesting to note the varied line of fertilizier materials bearing nitrogen that the Germans are already putting on the market. They have first, ammonium sulfate, both from synthetic ammonia and from their coke and gas plants. Their well advertised Leunasalpeter is ammonium sulfate-nitrate. By treattng by-product calcium carbonate with nitric acid they get lime nitrate, which they are pushing for use on acid soils. Ammonia and carbon dioxide under tremendous pressure are yielding urea, which with its 55 per cent. ammonia is the most concentrated ammonia carrier known, possibly the ultimate high-test fertilizer. Apparently the commercial operation of this process presents some difficulties, for it is not being marketed as aggressively as others in the line.

Most significant is the conversion of half the capacity of the Piesteritz cyanamide plant of the Bayer Co. into the production of phosphorus by the Liljenroth process for the Badische Co. This metallic phosphorus will be con-

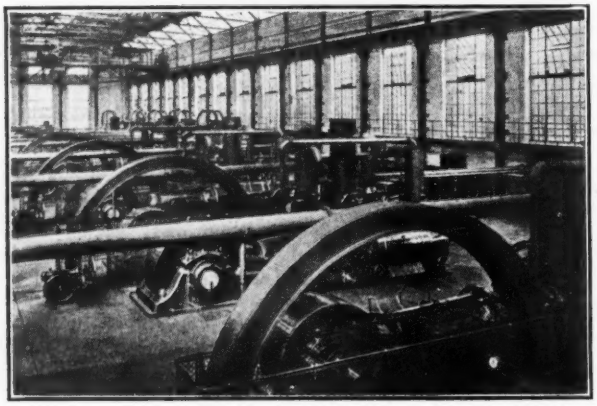


B. A. S. F. Works at Ludwigshafen

verted to phosphoric acid, for fertilizer uses, at the Merseburg plant, where the by-product hydrogen will be used for ammonia synthesis.

Competition Among Ammonia Processes

This development and the sale of the Knapsack cyanamide plant confirm the belief that the cyanamide process is now to be considered definitely outclassed by the synthetic ammonia method of nitrogen fixation. The Germans, probably due to experience and war-paid plant, continue to use the Haber-Bosch process of ammonia synthesis, although practically all the new plants, outside of Germany, are using either the Claude or the Casale processes. There are at present ten Claude and nine Casale plants in operation; three Claude plants are building or projected and twelve Casale. There are six Fauser process units, three of them still under construction. Two new process units, three of them still under construction. Two new process have been developed during the year just past, the duParc in Switzerland and the Mont Cenis in Germany. This last promises some interesting market developments; for twenty years the German chemical industry has been encroaching on the markets which might quite naturally have fallen to German mine owners. The Ruhr industrialists were the original purveyors of coal-tar crudes to the chemical industry as a raw material for dyestuffs, fuel oil, disinfectants, medicines, etc. They were pioneers with by-product sulfate in the German nitrogen market, and enjoyed the benevolences of their Government since Chilean nitrates were detrimental to the



Ammonia Compressors

as it was indispensable in the dyestuffs industry, was used as solvent in a number of chemical processes and as fuel.

But the coal industry's good start was not maintained and when the Haber-Bosch process of nitrogen fixation was introduced, mine owners received a severe blow, since coke oven nitrogen lost its prominent position and the I. G. grew to hold a practical monopoly of nitrogen production. Now, however, the Ruhr industrialists have evidently been forced to take action in view of the growing influence of the I. G. in the coal industry and the consequent loss—or partial loss—of their chief purchaser. They claim to have a process of nitrogen fixation which does not infringe upon the rights of the I. G. in this field. The I. G. is protected by patents on processes using greater than 100 atmospheres so that the value of a process using less pressure would seem quite considerable. Such is the process owned by the Mont Cenis mine. Coke oven gas is partly liquefied and separated at low temperature, the result being hydrogen of exceptional purity, for the reason that impure components have a higher boiling point. The remaining gas, comprised chiefly of methane and carbon monoxide is reconducted to the coke ovens where it is used as an auxiliary fuel. The fact that it is possible to work at the low pressure and temperature is due to special, highly active catalysts peculiar to the Mont Cenis process. It is claimed for the process that it is simple and has great technical advantages over the methods of Bosch, Claude and Casale. From the start the Mont Cenis management claimed to infringe in no way upon the rights of the I. G.; but the I. G. holds a different opinion and has brought suit against Mont Cenis for patent infringement. In the meantime the I. G. have been vigorously pushing nitrogen products other than fertilizers, and it is reported that their ammonia cylinders are now found in refrigerating plants throughout South America, Asia, and even tropical Africa outside of British domains.

Aggressive Sales Campaigns

In the fertilizer field they and the British Sulfate of Ammonia Federation are both carrying on vigorous and effective propaganda which, particularly in the Orient, is said to be widening their markets in most satisfactory manner. The best confirmation of this is the considerable programs of expansion during this year and next for existing synthetic ammonia plants drawn up in both countries. Moreover, the German interests have most carefully surveyed the markets for fertilizers here in the United States and have entered into several negotiations with large interests here. They are evidently well sold on the belief that the fertilizer consumption of American farms can be tremendously increased. In fact, that it will of necessity increase. One of the leaders of the Stickstoff Syndicat, which markets all the fertilizer chemicals of the I. G., repeatedly emphasized in his exclusive interview with CHEMICAL MARKETS last summer that we should be importing foodstuffs within a decade. He plainly indicated his belief that fertilizer factories of tremendous size will some day be necessary in our corn and wheat belts. All this is curiously in contrast to the present attitude of our fertilizer manufacturers and of the American producers of synthetic ammonia.

So rapid has been the expansion of the entire atmospheric nitrogen fixation development—form a total of 91,491 tons of nitrogen in 1913 to 661,500 tons last year— that its causes, which have direct industrial and political effects reflected in the market situation, are lost sight of in watching the rocket-like climb of production totals. It is particularly timely to review briefly these significant factors.

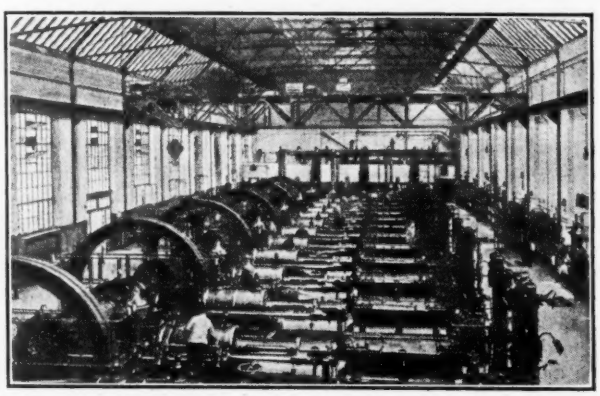
It is surprising how much agricultural use of nitrogen has been talked about, yet how little economic force, either as competitive pressure or financial incentive, fertilizers have exerted.

Nitrogen or Starvation

It was in 1898 that Sir William Crookes, tall, thin, with white spade beard, stood up, a dramatic and dynamic chemical leader, to deliver his presidential address before the oldest and most dignified scientific association in the world. No need for him to rap his gavel for attention. He had long been famous from trenchant statements, and his listeners expected a provocative address. They got it. He told them bluntly that the human race was to be starved off the globe, for lack of nitrogenous fertilizers, unless the natural nitrogen from Chili nitrate were supplemented by chemical means. He indicated plainly that the solution was a successful tapping of the inexhaustible nitrogen supplies in the air all about us.

Although the vivid picture he painted of a terrible, lingering, world-wide starvation fired the imaginations of the writers of popular science, and his speech became a favorite date of chemical historians, nevertheless, gold and gunpowder have played a much bigger part in nitrogen developments than have corn and cotton.

Eight years before Sir William's arresting address before the Royal Society, MacArthur and Forrest patented the cyanide process for the extraction of gold from its ore. A few years before the famous Witwatersrand (the Rand) gold fields in South Africa had been opened up, and here the application of this cyanide process to the quartz embedded metal proved most successful. The gold output of the district jumped from 497,817 ounces in 1890 to 2,024,164 in 1894. It was the great metallurgical market for cyanide salts, thus opened up, that made commercially possible the operation of the cyanamide process of nitrogen fixa-



Pumps for Cleaning Gases under High Pressure.

tion. This had quickly followed and already supplanted the pioneer arc process of Bakeland and Eyde which came into commercial operation in Norway in 1903.

Mars Takes a Hand

So too, in the case of the Haber process for fixing nitrogen in synthetic ammonia, which was developed in 1910. This process was perfected by Bosch and the great plants at Oppau and Merseburg were built under the sharp spur of Germany's war necessity for nitrogen when British cruisers cut her off from the supplies of Chili nitrates for explosives. These plants furnished munitions for the German Army, and one of the first acts of the German Republic, after the war, was to put an embargo on the importation of natural nitrates. During the War they had lost their supremacy in coal-tar chemistry. They determined to hold their war-won experience in coal-gas chemistry, and plainly they had a clear vision of the world-wide, commercial war for nitrogen supremacy, the opening skirmishes of which have just been fought during the past year.

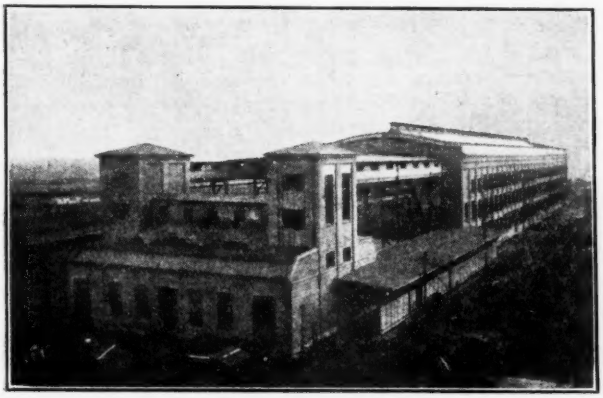
Nitrogen for explosives are being turned into fertilizers. The farmer is heir of the soldier. Which is assuredly the modern, chemical way of beating our swords into plough shares.

From being almost dependent upon Chili nitrates for nitrogen supplies as we were in 1900; we are today virtually independent. Chili supplied but a little more than twenty per cent. of our industrial and agricultural nitrogen in 1926; and judged by expansion of the air nitrogen industries all over the world, she will supply even less in 1927. Obviously, the hold of the natural monopoly has been broken, and as one of the men close to the Chili nitrate producers exclaimed ruefully the other day, "And the same Badishe Company, which fifty years ago broke the indigo monopoly of India, is today a dominating factor in the I. G. which is the world's producer of synthetic ammonia."

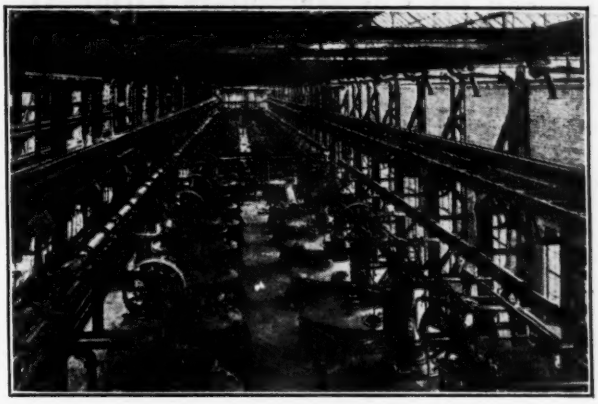
Taxation Processes Compared

Nitrogen was first fixed from the air by forcing it to combine with oxygen in an electric arc. This arc process requires vast quantities of cheap electricity, and can only successfully compete with newer methods under favorable conditions of available, low-cost hydroelectric power. Although the pioneer, it has been quickly supplanted and today supplies but 7 per cent. of our air-fixed nitrogen production.

Soon after the arc process came the fixing of nitrogen with carbon to form cyanamide. The raw materials needed are coal, which must be converted to coke; limestone, which is burned to quicklime; nitrogen, from the air, which, however, must be separated from the oxygen in the air; and electric power for heat in the furnaces. The advantages, over the arc process, are a great saving in power. Its disadvantages are the fact that cyanamide, although



Gypsum-Ammonium Sulfate Plant



Ammonia and Gypsum Apparatus for Manufacture of Ammonium Sulfate

readily convertible into sodium cyanide or ammonia, is not directly available for so many chemical uses as is ammonia, the product of the Haber process.

Except for our gigantic political football at Muscle Shoals, we have no cyanamide plant within the United States. However the very company for whom and on whose specifications this famous plant was built is operating a cyanamide plant on the Canadian side of Niagara Falls. Most of this output is marketed in the United States. This same company is already supplying the American farmer with all his demands for cyanamide fertilizer, and is producing an excess sold as ammonia and as cyanides. Therefore, Muscle Shoals nitrogen, to be available for fertilizer, would have to be converted into some other form. This can be done by two chemical steps, first to ammonia and then to ammonium sulfate. But—and this "but" explains why Muscle Shoals is not seriously thought of in the chemical industry as a potential fertilizer plant—the tremendous expansion of our coke ovens during the War had already given us a surplus of ammonium sulfate. After supplying the fertilizer industry with some 250,000 tons, we have an equal tonnage to export. Moreover, it is calculated that by 1930 we shall have 800,000 tons. Finally, if ammonium sulfate is sought it can be more directly and more cheaply produced by the third air nitrogen process, which, in turn, is fast replacing its predecessors, the arc and the cyanamide methods.

The newest process, based on Haber's pioneer work, fixes the nitrogen of the air with hydrogen to form ammonia. This product is, from a commercial point of view, certainly the most flexible of all nitrogen carriers. Ammonia itself has a big and growing market in the refrigeration field, and it can be converted directly, and at minimum cost, into sulfate or nitric acid, while from the acid into a wide variety of nitrate salts. Already 75 per cent. of all our fixed nitrogen is made by the ammonia process, and plant expansions are already under way that, before the end of the year, will double the world's synthetic ammonia supplies.

The arc process is almost confined to Norway. Two plants (Rjukan and Notodden) produce annually between 35-40,000 tons of nitrogen in the form of sodium nitrate, and nitrite, calcium nitrate, and nitric acid. Two plants in France, at Pierrefitte and La Roche, make nitric acid and a small plant of 1,000 tons capacity at Patsch, Austria is operating at capacity. The largest plant outside of Norway, capacity 5,000 tons, is building at Rhima, Germany; but it is significant that this is the only arc plant at present contemplated. Our sole American arc plant, operating on "off peak power" at Le Grande, Wash., with an inconsequential output of 300 tons, in the form of the nitrite, is apparently withdrawing from the field.

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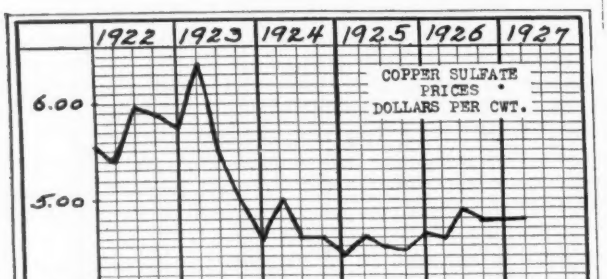
Reason for Copper Sulfate Firmness

A firm market for copper sulfate has existed for over ten months, after several years of over production and weak prices. This situation was brought about by an exceedingly heavy demand for the ordinary uses, the recognition that copper sulfate has a very important place in flotation of ores as a promotor, and also by one of the producers in the middle West discontinuing operations, and the sales of the company that succeeded him being in the hands of the largest maker in the country.

The outlook for the current year is one of continued firmness. There is no reason to expect that there will be any decrease in the quantities used for agricultural uses. Orders on the books of manufacturers for shipments to the South during April are well up to last year. The Northern part of the country has not started to order its requirements yet, but the prospects of heavy demands are bright.



Flotation consumers absorbed smaller quantities in the latter part of last year due to the fact the markets for lead and zinc were low, and copper sulfate is a specific promotor for sphalerite, a zinc blende, and floats that mineral in the presence of others.

Copper sulfate is still selling at very low prices when compared with former years. It is one of the few items that is selling below the prices reached during the industrial crash of 1920-1921. Many times it has sold well below the cost of the raw materials entering into it, namely copper metal and sulfuric acid. In the first part of the year 1926, makers were so heavily stocked that at least one maker sold material as low as $4.00 100 lbs. when the quoted market was $4.30. Imported material is not offered in the Eastern market, but some material was recently imported from Germany in the Northwestern part of this country and domestic makers were forced to reduce their price at that point. English material imported into this country is the particular grade known as "snow" and is sold by a large maker in this country. For the past nine months due to the coal strike, the British makers have been unable to offer this material to America at prices below manufacturing costs here, and consequently the domestic maker that formerly imported this material has been making it for some time. This manufacture is still being engaged in, as British industry has not recovered sufficiently as yet to permit of its manufacture and exportation.

Since the organization of the British Copper Sulphate Association, a truce has been signed in the destructive export war, waged principally in Italy; and the world market on copper sulphate has been much more stable. The fact that Italy is now producing sufficient sulphate for her own large consumption in the vineyards has, contrary to

(Continued on page 406)

Who's Who in the Chemical Industry

Edward S. Burke, owner, New York; Born: New York, Mar. 30, 1887; Educat.: DeWitt Clinton High School, Miller Bus. school. Mar.:Anna Agnes Tivnan, New York, June 12, 1910. Children: 4 sons, 1 daughter. Bus.: Stenographer, Bayer Co. Inc. formerly Farbenfabriken of Elberfeld, asst. mgr. pharmaceutical dept., mgr. of photographic dept., mgr. patent dept., and secy. to Dr. Hugo Schweitzer, 1902-1917; vice pres. T. J. Parker, Inc. 1917; pres., 1919-1926. In bus. under own name since Mar. 1926. Mem.: B. P. O. Elks No. 22, Brooklyn, Vera Cruz Council, K. of C.; Salesmen's Assn. of Amer. Chem. Ind.

Joseph Geza Dely, consulting chemist, Queens Village, L. I. Born: Hungary, Mar. 2, 1879; Educat.: Hungarian Royal Joseph Polytechnium Ch. E., 1903, Budapest, Hungary. Mar.: Adolfine Harrich, New York, 1911. Children: one son. Bus.: chief chemist, Atmospheric Nitrogen Corp., Syracuse, until Feb. 1, 1926. Public Record: Cooperative work with U. S. Ord. at Sheffield, Ala., Nitrate plant No. 1. Mem.: A. C. S., A. I. C E. Remarks: worked out problem of gas purification for direct synthesis of Ammonia. Hobbies: hunting and cello playing.

Daniel Doughty, supt., Kalbfleisch Corp., Chattanooga, Tenn. Born: Erie, Pa., Mar. 8, 1893; Educat.: B. S. chem. eng., 1917, Univ. of Michigan; Mar.: M. Catherine Fitzgerald, Beaver, Pa., Apr. 25, 1922. Bus.:Chief chemist, General Chem. Co., Cleveland, 4 years; supt., Kalbfleisch Corp., 4 years. Mem.: American Chem. Soc., Phi Delta Chi.

Dr. Camille Dreyfus, pres. American Cellulose & Chemical Mfg. Co., Ltd., New York. Born: Basle, Switzerland, Nov. 11, 1879. Educat. Ph. D. Univ. of Basle, Bus.: Partner and founder, Cellonit Co., Basle, Switzerland; founder, British Celanese, Ltd., 1916; and American Cellulose & Chemical Co., Ltd., 1918; founder, French and Italian companies with similar object. Public Record: At invitation of American, British, French and Italian Governments, plants for cellulose acetate were erected in the respective countries during the World War. The product was mainly used at this period for airplane purposes. Mem.: Manhattan Club, British Empire. Remarks: Creator, together with my brother Dr. Henry Dreyfus, of the "Celanese" industry. Hobbies: chemistry, business.

Ernest Baldwin Miller, vice-pres., Davison Chemical Co. and Silica Gel Corp., Baltimore, Md. Born: Cumberland, Md., Dec. 15, 1884. Educat.: B. S., Univ. of Wisconsin 1906. Mar.: Janet Bruce Pinkerton, Baltimore, Sept. 1913; six children. Bus.: Testing dept., General Electric Co., Schenectady, N. Y., 1906-07; Davison Chemical Co. plants, 1907 to date. Mem.: N. Y. Engineers, Chemists, American Institute of Chemical Engineers, American Electrochemical Society, American Institute Mining & Metallurgical Engineers. Hobbies: Music and hunting.

Owen Marlowe Voigt, pres., Herrick & Voight, New York. Born: Brooklyn, N. Y., Feb. 20, 1888. Educat.: Montreal High School, N. Y. Univ.; Mar.: Lorraine Reynolds, East Hampton, L. I., June 27, 1917. Children: two. Bus.:Royal Baking Powder Co., 1911-13; Herrick & Voigt, 1913 to date. Public Record: sergt., C. W. S. U. S. A.; lieut., C. W. S. R. O. Mem.: Phi Delta Phi, West Side Club, Englewood Golf Club, Amer. Chem. Soc. Hobbies: trout fishing

Who Will Make Our Dyes?

An Analysis of the Government Reports to show the Actual Trend in the Number and Size of Manufacturers and What their Products are now and are Likely to be in the Future

FOR some time past there has been a growing opinion amongst those interested in the future of the American dyestuff industry that there is a trend toward concentration of manufacture in the hands of a few large makers. With the idea of either substantiating or refuting this opinion CHEMICAL MARKETS has conducted an extensive investigation into the situation over a period of years embracing 1920 to 1926.

Anyone expecting startling revelations would be doomed to disappointment, unless the sharp cut in the price average might be considered a revelation. It is fairly generally known that the present day price of most dyes has been more than cut in half since the immediate post war days. However the accompanying table covering the domestic production, sale, value and average price for 1920, 1923 and 1925 may serve to bring home more clearly the tremendous price reductions over such a short period. The last available price average is for 1925 but there is no doubt that the present day average is again below that of 1925.

	Production (pounds)	Sale (pounds)	Total value	Average price per lb.
1920		88,263,000	$95,613,749.00	$1.08
1923	93,667,524	86,567,446	$47,223,161.00	.55
1925	86,345,438	79,303,451	$37,468,332.00	.47

The downward movement can of course be attributed to two main factors, namely, competition and increased production efficiency. Competition in the dyestuff industry since the war has been ruthless and causes one to speculate as to the fate of those makers who are not "up to the minute" in every respect.

Further reference to official figures shows that the number of makers increased from 171 in 1920 to 208 in 1923 and decreased in 1925 to 185. Apparently most of the makers thrived on competition and price cutting for a few years, for the number of establishments were on the increase, but the past few years seem to have taken their toll, not in an alarming manner, but nevertheless, steadily. At the present time there are ten or at the most a dozen manufacturers who are outstanding in the production of dyes in this country. Almost without exception these companies are financially well off, maintain extensive laboratories and have a tremendous turnover each year, all essentials in any scheme to increase efficiency. In all modern day industries, increased production efficiency invariably reflects to the advantage of the buyer in the selling price, and most certainly are these large makers in a position to grasp every opportunity that efficiency offers. On these facts is based the opinion cited above that the manufacture of dyes is becoming concentrated in a few hands.

Head and shoulders over the field in the number of dyes produced are the National Aniline & Chemical Company and E. I. du Pont de Nemours Company. Official Government dye figures for 1925 show the former as making 184 dyes of which 51 are exclusively of their own manufacture, and the latter making 152 dyes, 52 being exclusive. These figures include the dyes listed by Schultz number as well as those not classified by Schultz and some American developments for which there are no foreign equivalents. A good idea of how the leading manufacturers rank on the question of production may be gained from the following table:

Maker	1923		1025	
	produced	exclusive	produced	exclusive
Amalgamated Dyestuffs & Chemical Works (John Campbell & Co.)	55	9	61	9
American Aniline Products Co.	79	7	56	16
Calco Chemical Company	19	1	18	none
Cincinnati Chemical Works	74	16	90	16
E. I. du Pont de Nemours	142	48	152	52
Grasselli Chemical Company	32	39	60	10
Heller & Merz	34	9	41	7
National Aniline & Chem. Co.	156	24	184	51
New England Aniline Works	31	12	30	14
Newport Chemical Works	91	20	97	20
Sherwin-Williams Co.	17	none	24	4

Lacking competition on specialty dyes it is to be presumed that this type of dye yields the greatest margin of profit. It is therefore significant that more than one-third of du Ponts products and almost one-third of National Aniline's products—the two largest makers—are made exclusively by them.

THE suggestion has been advanced that while the makers of large production and more competitive dyes are thinning out, the number of makers of small production or specialty dyes have been increasing. This latter class is the forte of the smaller producer and it is pointed out that the larger makers are breaking into this field. That this assertion is not without foundation is borne out by the following table on small and large dyes:

Small Production Dyes
(75,000 lbs. and under)

Year	Dyes	Total Makers	Average per Dye
1920	14	59	4.2
1923	18	89	5.0
1925	17	83	4.9

Large Production Dyes
(500,000 lbs. and over)

Year	Dyes	Total Makers	Average per Dye
1920	15	143	9.5
1923	18	170	9.4
1925	18	151	8.3

Amplifying these tables it might be explained that in each year a number of dyes were chosen as indicated, either under 75,000 lb. or over 500,000 lb. production and an average was arrived at by dividing these totals into the total number of makers with the result shown above.

It is impossible to give in detail here more than a few of the more important dyes both large and small to further bear out the figures. An example may be taken of methylene blue of which there was produced in 1920, 577,265 pounds, by 12 makers; in 1923, 410,003 pounds, by 4 makers and in 1925, 375,540 pounds by 3 makers. Again, and on a larger scale, sulfur black was produced in 1920 to the extent of 16,305,037 pounds by 12 makers; 15,212,142 pounds in 1923 by 7 makers and 14,505,404 pounds in 1925 by 5 makers. There are of course exceptions to this trend as is the case with direct brown, 3GO of which 5 makers produced 623,757 pounds in 1920 and 13 makers produced 841,636 pounds in 1925, and developed black BHN of which there was produced 803,501 pounds in 1920 by 6 makers and 694,577 pounds by 9 makers in 1925.

The impression left after a study of the available figures is that while the contention that the dye industry is gradually drifting toward a close concentration of production, it is probably based on facts; at the rate of elimination of the "little fellow" for the past six years, it is still a far cry to the day when the small maker will find it impossible to exist.

Alcohol, Ammonia and Sulfate

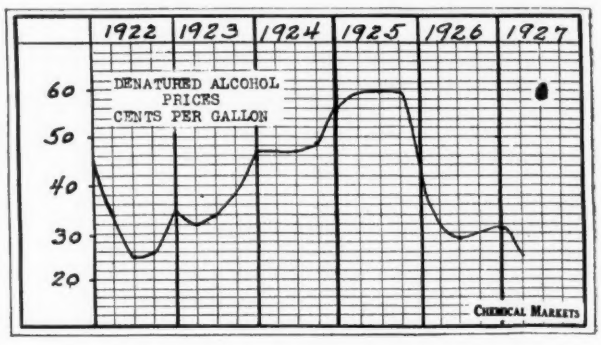
Production of ethyl alcohol with a purity of 97 to 98 per cent and a capacity of five tons daily from coke-oven gases is being engaged in at Compagnie des Mines de Bethune. The "Chemical Trade Journal", London, says in regard to this process "Plans are well advanced towards doubling this output, so that there should shortly be an annual production of something like 40,000 hectolitres of the alcohol. This success has only been attained after many years of experimental and development work. In the process, which was described in some detail in our issue of June 19, 1925, the coke-oven gases are progressively treated by compression and liquefaction for the removal of all their constituents except the hydrogen and nitrogen, the mixture of the last mentioned two gases being utilised directly for ammonia synthesis by the Claude process, as worked by the Bethune concern. The first constituents of the coke-oven gases removed are the benzol, the sulphuretted hydrogen and the carbon dioxide, after which the ethylene is obtained. This ethylene is the source of the alcohol, the first step being conversion to sulphovinic acid by interaction with sulphuric acid, and the second step being the hydrolysis of the sulphovinic acid to give ethyl alcohol and regenerate the sulphuric acid in the diluted condition. It appears, however, that there are yet a number of technical difficulties to overcome and it is by no means certain that the process will prove a commercial proposition after subjection to the trial of a period of continuous working. In the first place, it has been found that the conditions under which the ethylene is extracted from the coke-oven gases give rise to a sudden cooling of these gases in a manner that is undesirable from the viewpoint of the utilisation of the residual gases in ammonia synthesis. Secondly, it has been found that during the volatilisation of the liquefied ethylene, a black solid com-

(Continued on page 424)

Alcohol and Raw Materials

Weakness in alcohol at this time has almost become seasonal. For several years now the Winters have been quite mild and the large stocks held by makers and other factors for the expected heavy anti-freeze demand have failed to move into consumption, with the result that as soon as the time of peak movement is past, makers enter into a struggle to dispose of their large stocks and in the process tear down the price structure so carefully built up each Fall in anticipation of a demand that does not quite materialize.

Today much is said about molasses prices, whereas the buyer of alcohol was never told a word about molasses in past years, and most of them never that alcohol was made from molasses. That was because there was more molasses than necessary and the prices paid for it were so low that they never had the slightest influence upon the selling prices of alcohol. But today this is changing rapidly, consumption of alcohol is in-



creasing, although new plants still keep the market 15 to 20 per cent over-produced and consequently weak, and molasses supplies are being bought up by outside factors with the result that the prices of molasses today would have a very marked effect upon the selling prices of alcohol if all makers were forced to pay the present market price of 7c lb at Cuba for supplies. There is no question that the present selling prices of alcohol, 25c gal. and in some cases lower, represent a raw material cost that yields very small profit. Assuming a market of 7½c lb at the Eastern Coast, 2½ gallons necessary for a gallon of alcohol costs 18¾c; add to this the necessary 4 per cent of methanol at 80c gallon, which is 3.2c, and we have 22c gallon. Add to this a distilling cost of 2c per gallon, and the cost of a gallon of alcohol is 24c gal., which is quite close to the selling price and leaves practically no margin for selling, packing and shipping expenses, let alone profit.

Of course it must be remembered that very few, if any, of the alcohol makers have as yet paid anything like 7c or 7½c gallon for the molasses being used today, and undoubtedly there is some profit in alcohol even at the very low prices prevailing. But it appears that a definite change has developed in the alcohol situation, in that selling prices of alcohol appear destined to be directly based on raw material cost in the future.

The alternative raw material is corn, but the price of molasses would have to reach 10c gallon in the corn belt before it would be on an equal basis with corn at present prices which are quite low. Molasses prices will always be controlled by corn, and no matter what sugar companies do, they cannot hope for much more than they have accomplished today, namely to drive molasses prices within shooting distance of corn, and then hold them there. If alcohol consumption continues to expand, this will result in a continued firm market for molasses without recourse to artificial means of maintaining prices.

Chemicals in Bags

Of special interest to shippers and consumers of chemicals alike is the type of container. Kegs, barrels, casks, drums and bags are the most common containers for dry chemicals. The advantages of bags are set forth in this article.

By A. C. Carpenter

Vice-President Bemis Bros. Bag Co.

DEVELOPMENT of a special bag which bids fair to replace heavy, cumbersome barrels, kegs, casks and boxes for packing dry chemicals has recently been made. This special bag is constructed of tough tightly woven burlap or cotton cloth to which is attached, by a waterproof cementing process, one or more layers of Kraft paper, forming a moistureproof, siftproof and airtight container when closed. Because they cut costs, facilitate handling, and carry their contents in a satisfactory way, bags of this type, although new in the packaging field, have rapidly been adopted as standard containers for dry chemicals by many of the more progressive chemical manufacturers in the United States.

These bags are used for many kinds of products now and their use is increasing daily. Chemicals, such as alum, barium chloride, aluminum stearate, copper sulphate, calcium chloride, Glauber's salt, sodium hyposulphite and zinc sulphate, also colors, dyes, paint pigments, insecticides, quicklime and other substances, are being safely shipped in these containers at the present time. There is reason to believe the use of these bags will be extended to all dry, pulverized or granular products of moderate value, provided such products are not easily crushed, explosive, inflammable, highly poisonous, or strongly acid.

Bags appeal at once to the manufacturer because they result in immediate economy. The original cost is less than that of any metal or wooden container of equal capacity. For example, a sugar barrel costs from 60c to 90c while two half barrel bags cost from 18c to 25c each or 36c to 50c for a barrel capacity. This of course, results in a smaller amount of capital being tied up in container stock.

Another saving is made by eliminating freight on useless tare weight. The weight of bags is about 85% less than that of metal or wooden containers. To revert to the example used above, a sugar barrel weighs about 22 pounds while two half barrel bags weigh about 3½ pounds On a minimum carload shipment of soda ash, for instance, the saving in tare weight is approximately 2,500 pounds. The possible reduction in freight bills is at once apparent.

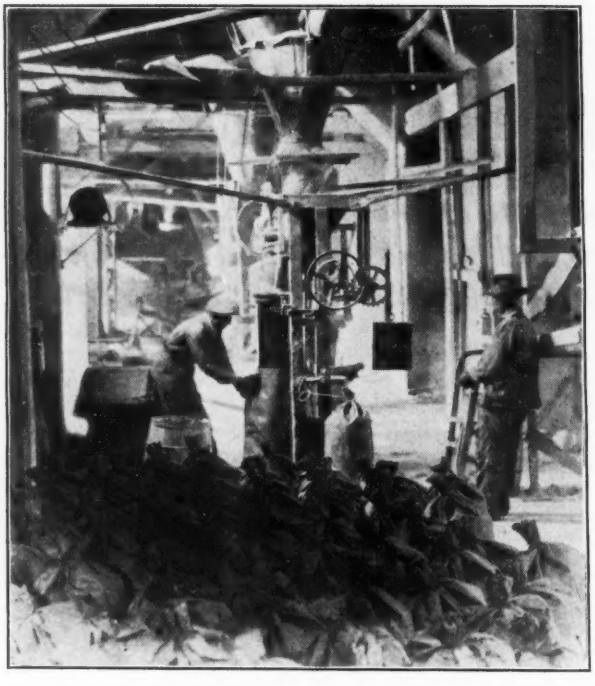
Further economies are found when these bags are used in the plant. Special, inexpensive machinery has been developed so that they may be quickly filled to an exact, desired weight by one man. The work of closing is equally simple as that of filling. A half-hitch is generally taken around the neck of the bag with a rope, one end of which has been made fast. This tightly closes the mouth, as illustrated in the picture, until a wire tie can be twisted around the neck by means of a special tying tool. A few seconds only is required to make the closure. Compare this with the time and labor necessary for heading the above mentioned sugar barrel. One man can easily handle these bags when filled,—storing and piling them without assistance.

The special bags for chemicals are packed in bales usually containing 250 bags each. One bale requires less room than one barrel. The storage room saved is so tremendous that one manufacturer using these bags was able to put a blacksmith shop in the space formerly used for storing empty barrels.

Because these bags are made in sizes to contain convenient weights of a chemical and because the necks form natural handles, they are not subjected to such severe strains as other types of containers of greater capacity.

They are flexible, and are therefore able to absorb

Stacking Bags for Storage



without damage the shocks encountered during the switching of the freight cars, or during the process of loading or unloading. It is rare, indeed, that a bag bursts in transit. Experimental tests, made on special bags filled with 100 pounds of insect powder, show they will withstand successive drops from various heights up to thirteen feet, which is far in excess of any rough treatment actually encountered in shipping. Bags filled with a chemical have been piled forty tiers high and stored for months without the bottom tier becoming weakened. Furthermore, the closure, if properly made, affords little chance for rupture. Bags have no unsupported heads to be broken in.

The materials from which the special chemical bags are made are not affected by long storage, and until a bag actually wears out its usefulness is unimpaired. These bags have no wood to dry out and no hoops to fall off. Heat and cold do not affect them—there is nothing about a bag to "spring."

For finely powdered chemicals these bags are especially valuable as they are siftproof. The finest kinds of powders can be packed in them without danger of loss through sifting. For chemicals requiring protection from water or moist air, such as calcium chloride, magnesium chloride, etc., these bags are extensively used and, closed with wire ties, afford complete protection to their contents. Experiments have been made by placing these bags filled with deliquescent chemicals in a steam room for several months, at the end of which time the contents were examined and found to be unaffected.

On account of advertising possibilities these bags are valuable containers. Excellent printing in bright colors may be done on them at moderate cost. This enables a manufacturer to put his brand and name on his bags, and every bag becomes an advertisement for his product.

Due to the many uses to which these bags are put, sizes are standardized to a limited extent, and for certain commodities only. They can be made of any capacity, the dimensions being limited only by the widths of standard goods.

Cellulose From Rice Hulls.

THE only plant in the world of its kind, making cellulose from rice hulls and rice straw, started operation of its complete process for the first time this week at Lake Charles, Louisiana. It is the fifth unit of the Massasoit Mfg. Co. of Fall River, Massachusetts. First experiments with rice hulls were made about two years ago at the Oakdale plant of the Massasoit Company upon the suggestion and with the cooperation of the Lake Charles Rice Milling Co., adjacent to which the new cellulose plant has just been constructed. Heretofore rice hulls had been burned up in the furnaces, being considered worse than useless and involving a serious disposal problem for rice millers. Now this "worthless chaff" will be turned into cellulose for use in making rayon, artificial leather, motion picture films, automobile lacquers, celluloid, translucent paper for candy boxes, wall molding, etc.

Ats its Montville plant in Connecticut, the Massasoit Co. was the first to make cellulose from cotton linters on a commercial scale, having experimented with Government officials on the project at Newport, R. I. about 30 years ago. This concern supplied the Du Pont Company with much of its cellulose for the manufacture of explosives during the World War. At present 500,000 pounds of hulls are being utilized and yearly capacity is estimated at close to 16,000 tons. A storage warehouse for sheltering the ground hulls has been built having a capacity of 5,000 tons, sufficient for a 6 months run after the rice milling season has closed. Grinding and storing commenced late in November, but the complete process of converting the raw material into cellulose has just been started.

Coke Ovens Increasing Rapidly

CONSTANT effort by steel mills toward reduction of costs is being reflected in rapid change from beehive to by-product coke ovens. Abandonment of the older method of coke production recently has gained exceptional impetus. During 1926 Koppers Co. received orders for 826 Becker type combination ovens with an aggregate annual capacity of 7,500,000 tons of coal. Orders were received from 12 companies, 7 of which are pig iron producers who will use 703 of the ovens.

Subsidiaries of United States Steel Corp. ordered 411 Becker type ovens during 1926, by far the largest order. Carnegie will install 348 of these ovens at its Clairton plant. This will double by-product coke capacity at this point, making it the largest by-product coke plant in the world.

The remaining 63 ovens being supplied to United States Steel will be located at the Birmingham, Ala., plant of Tennessee Coal, Iron & Railroad Co.

Last year Bethelhem Steel Co. ordered 134 ovens from Koppers Co. Of these 77 will be located at Johnstown, Pa., and 57 at Lackawanna, N. Y. Weirton Steel, Central Alloy Steel, Republic Iron & Steel and Trumbull Cliffs Furnace Co. also ordered ovens.

Youngstown Sheet & Tube Co. plans to build 120 by-product ovens at its South Chicago works. Placing of this order is expected soon.

Jones & Laughlin Steel Corp. is completing an extensive development, which includes increased river transportation, which this company pioneered, the opening of additional mines and construction of storage facilities. In 1925 orders for 122 Koppers ovens and 60 Wilputte Coke Oven Corp. ovens were placed. Development of a large tract of coal

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Manufacturers and Distributors

A Veteran Sales Manager of a Leading Chemical Manufacturer, who for obvious reasons does not want his name made public in connection with this article, Tells the Problems Surrounding the Chemical Manufacturer in the Distribution of His Goods, and Why Selling Through a Distributor is Not the Best Method

THE steps by which chemicals find their way from the manufacturers to the consumers are so many and devious as practically to constitute a circular staircase. A number of manufacturers have been accused, and not without reason, of substituting the simple expedient of a chute. Such a change in the status of affairs must have a cause, and this article has to do with the reasons why chemical manufacturers and industrial chemical consumers are showing a tendency to eliminate sales agents, brokers, etc. from the chain of chemical distribution.

It is the chemical manufacturer's ultimate purpose to satisfy some consumer's desire for a particular chemical. The utility of a chemical—its want-satisfying power—comes into existence under conditions of change in location, form and time. While a chemical stored in the manufacturer's plant has an elemental utility derived from some prospective use, it is of no value to a consumer until it is in the consumer's plant in a usable form in convenient containers and at a certain time. These increments to the elemental utility constitute distribution. As far as the consumer is concerned, distribution is every bit as essential a component of the final utility of a chemical as the process of manufacture itself.

Distribution—the functions of the sales agent, broker, jobber and wholesaler—must obviously continue, though it is of little fundamental importance what organizations carry on the work. It is to be desired of course that distribution be effected as economically as possible.

Commission agents or chemical brokers may be considered as a part of the producers' sales organization while wholesalers and jobbers may be considered as purchasing agents for a number of consumers. It is the former group whose field is being taken over by the manufacturers. Since in many instances one organizaton functions in both groups it would be more accurate to say that manufacturers are narrowing the activities of independent chemical distributing organizations to wholesaling and jobbing.

At the outset chemical manufacturers usually commence operations by producing one or a very few chemical products. For a period of time the chief problem occupying their attention is the actual process of manufacture. They are not ordinarily equipped to effect thorough-going distribution economically. Since, however, distribution is of fundamental importance it is necessary under the circumstances to hire this part of the work done by distributing through agents or brokers whose compensation consists of a commission or overage or both. These sales agents and brokers of course deal with wholesalers, jobbers or other representatives of the consumers.

As the activities of such a manufacturer increase and the number of the chemicals produced increases, the problem of adequate and undisturbed distribution becomes very evidently of utmost importance to him. He is faced with two alternatives—either of continuing to distribute through agents or of maintaining his own sales organization. He is forced to consider the merits and disadvantages of each arrangement.

If the manufacturer elects to work through one or a number of distributors, he automatically acquires an extensive sales organization which is in more or less close touch with the users of his chemicals. This organization, however, handles a great number of products besides his own and his, naturally, receive only an amount of sales effort in proportion to the number and importance (to the agent) of his articles as compared with all of those which the agent is handling. If it happens that the products which the manufacturer has to sell must be handled on a narrow margin of profit, the proportion of sales effort is correspondingly less. In other words, the distributor is not necessarily inclined to push the manufacturer's products as strongly as the latter might like, nor is he necessarily inclined to push each of the manufacturer's products in such a way as to approximate a definite relation between the volume of the sales of the various products which may be necessary to the economical operation of the chemical works.

Further, a manufacturer when he deals through a distributor is not in close touch with the consumers of his products. The importance of this fact to a manufacturer depends on his idea as to the strength and permanence of the agent as a link in his chain of distribution. Unfortunately manufacturers' agents have frequently proven a weak and temporary link for the reason that they are apt to consider themselves solely buyers and sellers of chemicals, instead of manufacturers' distributors as well. When such an agent assumes this attitude, and a new source of supply, domestic or foreign, places him in position to secure the same chemicals as offered by the manufacturer at a better price advantage, he is very likely to turn to this new source of supply.

THIS is fine for the distributor who thus obtains a larger profit, but the manufacturer finds himself cut off from the users of his products,—they are customers of his distributor, not his own customers. He is then obliged to build up his sales through a new distributing connection or go after the business himself; either alternative results in considerable inconvenience as well as some temporary and permanent loss of business. And much of the competition which he finds has been built on his own goods.

For the manufacturer to build up his own sales organization with branch sales offices requires time, effort and money. In return, however, he is placed in close

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Tanning Extracts Recover

THE dawn of a new era seems imminent for the suppliers of extracts to the leather trade. For a period of five years, with the exception of occasional spurts of business, these lines have been at the point of stagnation. It appears that the present situation has a more solid foundation, and will be better sustained than have other periods of good business during the lean years.

The principal nemesis of the leather trade has been the oversupply of leather stocks on hand which necessitated the manufacture of goods in excess of the demand or the carrying of large stocks of raw materials, in either case an unhealthy condition in any line of business. However, these excess stocks seem at last to have been liquidated and the industry is in a better position from all angles. In the meantime the extract makers had allowed their stocks to run down, and were operating on a "hand to mouth" basis when the demand for extracts occurred. This found many of the manufacturers unprepared to fill orders.

Particularly is this so of chestnut extract. At this time of year the mountain roads of the producing section of Virginia and North Carolina, over which the wood is transported to the works, are in bad condition and impossible for hauling wood. Stocks at the works at present are not of such volume to enable factories that are in short supply to operate steadily. It will probably be late April or May before the movement of wood to the extract plants becomes general.

This condition augurs for a strong market on chestnut as well as all domestic extracts during the major portion of 1927. Domestic extracts have been selling below cost for years, and producers can hardly be censured for placing prices at a level that will show a profit. Since the first of the year, chestnut extract has been advanced in price to 2c per pound in tank cars, basis 25% tannin, f.o.b. works and powdered is quoted at 5½c per pound, basis 60% tannin.

Chestnut extract is not alone in this recovery from its slump of the past five years. Practically all the imported tanning materials share in the better movement. In some cases, as with valonia cups, consumers were surprised to find on actual demand that supplies are unobtainable. Divi divi, mangrove bark, myrobalans, sumac and wattle bark have all recovered from their listless positions and for the past two months have been increasing in price on a genuine demand and a consequent shortage at the primary market.

Advertising After 32 Years

The increased production of cotton in Texas has resulted in an increased production of cotton-seed meal. That is one reason, among others, why a new advertiser in farm periodicals of general circulation has made his bow.

Cotton-seed meal is a product of the Texas Cotton Seed Crushers' Association. The association sells it to farmers who mix it with their cattle food, the claim being that it is "43 per cent protein," and makes, when mixed with home-grown grain, an effective balanced ration which lowers feeding costs and increases the milk flow of cows and thereby gives the farmer a larger profit on feed, labor and investment. The Texas Cotton Seed Crushers' Association has been in existence for thirty-two years. At the present time the association has 172 members. The business is built on the cotton industry. The increased production of cotton means that there is an increased production of the products made from cotton seed by the cotton seed crushers of Texas. With more cotton-seed meal to sell, more farmers must buy it and buy more of it. So advertising is being employed to help.

That is not the only reason advertising is being employed, however. There are on the market a number of competitive feeds, such as linseed meal and corn gluten feed, called protein-rich feeds, and several mixed balanced feeds. The production of these competing feeds is increasing. Another point is that farmers and live-stock men haven't sufficient knowledge on the subject of balancing their grains with protein-rich feeds to secure maximum profits. The chief reason of all, therefore, for advertising, is to increase confidence in the products of the association's members by disseminating information that will enable users of such products to realize maximum profits.

A campaign of national advertising in farm publications was decided upon and began in the December, 1926, issue of the papers selected. The advertising is being paid for by a per-ton tax to members on the amount of seed crushed.

One advertisement is typical of the series so far. The caption emphasizes that profit from milk depends upon the cost of feed, thus, "The Profit of Your Creamery Check Depends on the Cost of Your Feeds," and the message reads:

Per dollar invested you get more digestible protein in a hundred pounds of Cotton-seed Meal than in any other concentrate. Properly fed with home-grown grains, it makes an effective balanced ration which lowers feeding costs. Cotton-seed Meal's 43 per cent protein increases milk flow and adds those extra dollars to your creamery check that pays a profit on feed, labor and your investment. A. L. Ward, known to thousands of Texas farmers as an authority on livestock feeding, Director of Educational Service for the Texas Cotton Seed Crushers' Association will tell you how to feed Cotton-seed Meal to lower feeding costs and make an extra profit from your dairy herd. Write him about your feeding problems. The coupon below, filled in and mailed will bring you any or all four booklets on practical feeding methods, FREE. Ask for them.

The coupon shows tiny illustrations of the booklets and provides spaces for indicating the booklets wanted, with blank lines for the inquirer's name and address.

Chemistry—A Profession

In a discussion at the dinner table an officer of a large employment bureau remarked: "We have placed a number of men in chemical positions and the low salaries which are paid are hardly believable."

Regrettably, such a statement could, in the past at least, be applied to many of our American chemical industries. In this matter of the chemist's reward for his services, as in all important questions, numerous factors are involved.

The chemical industry at its present "advanced age" is still young in organization. In its professional aspect it has hardly more than reached maturity. In a growing industry specialists are often forced to be jacks of all trades. Chemists whose ability is inherently in research, have sometimes been found giving a large part of their time to simple titrations and check analyses which could well be performed by subordinates.

There is fair reason for stating that Chemistry, as a profession, in the best and fullest significance of the phrase, is only now being realized. The statement we made in our October issue that the chemist is beginning to find himself, bears repetition. It will be remembered that the early efforts of embryo chemists were directed to the making of gold—but by mystic synthesis—elusively

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Glucose

Derivation, Uses and Possibilities of an Important Sugar

GLUCOSE is the simplest carbohydrate. Since its discovery by Kirchhoff, in 1812, it has been known by various names, such as dextrose, grape sugar and the like. It is probably the most studied of all the sugars and in many ways one of the most important.

From a purely scientific standpoint glucose is of special interest. For in being the simplest of sugars, it is the one that is first formed in the natural processes that build sugars and starches from carbon dioxide and water. It also possesses added scientific interest in that it is the form in which carbohydrate foods are absorbed into the blood current in the human body.

Glucose is widely distributed throughout the vegetable and animal kingdoms. It is found in the free state in the bark, wood and pith of a great number of leafy trees; is present in various cereal grains during germination and in many fruits. Leaves and branches of vines contain appreciable proportions of this sugar. Grapes in the fresh state contain as high as twenty-five to thirty parts of sugar per hundred in the case of the Californian grape, while other grapes like those of France, the Rhine, the north of Italy, contain lesser proportions of glucose.

The juice extracted from Indian corn contains as much as eighteen to twenty parts per hundred and the juice of the sugar cane at the beginning of maturation contains glucose almost exclusively, which is then converted into sucrose. Glucose also occurs in the blood of man and animals, in the muscles, the lymph, the spinal fluid and other fluids in the body.

There are two forms of glucose, known as alpha and beta. It is possible for one modification of glucose to be converted into the other through a series of complicated transformations. Each form of glucose has the same formula, $C_6H_{12}O_6$. Alpha glucose can be separated from its aqueous solution in the hydrated form at a temperature of 30 to 50 degrees C. Beta glucose is obtained as an amorphous precipitate on concentrating a solution of alpha glucose. It is formed in the state of crystals.

Glucose is very soluble in water as well as in a mixture of water and alcohol. It is attacked by acids and alkalies. When treated with alkalies under the proper conditions it can be made to yield saccharic and lactic acids.

Glucose is made from starch. Starch is a substance that has no definite formula, a fact which makes the chemistry of the formation of glucose from this raw material a rather uncertain one. Starch is a complex carbohydrate which is reduced into simpler forms by the action of all sorts of chemicals, such as acids, alkalies, acid salts and alkaline salts, oxidizing and reducing agents. The extent to which this reduction takes place depends on the character of the starch itself; on the temperature employed in the process; on the concentration of the reagent used and on the type of reagent; and on the duration of the process.

The character of the product obtained also varies in accordance with the treatment, for it is possible to obtain anywhere from a solubilized starch, a dextrin to a sugar, that is glucose, and in fact the reduction can be carried along so far that the starch will be entirely decomposed into acids and finally into carbon dioxide and water.

Glucose is made by the hydrolysis of starch. With the great variety of available reagents and the wide limits within which other conditions can be varied, and the fact that the molecular composition of the original substance is unknown, it is possible to obtain all sorts of products of very different properties. Furthermore this state of affairs makes the process one which is not at all easy to carry out to good results.

It is interesting to mention here the advent of a new reagent for treating starch, not so much for the production of sugar as for the conversion of this substance into soluble form. This new reagent is known as sodium para toluene sulphonchloramide. This reagent contains active chlorine in a modified form. It can best be compared with the chemical drugs of dyestuff character that are used to cure infectious human diseases and which contain violent physiological elements whose potency has however been materially reduced by making them a part of the complex dyestuff molecule. The same has been done with chlorine in the aforementiond compound, and it has been claimed that this reagent will produce a solubilized starch possessing properties that the ordinary soluble starches do not enjoy.

It is not intended here to follow out in detail the manufacture of glucose from starch. The actual process itself can be dismissed in a few words. The starting point of the operation is of course starch, and this is formed into a milk with water. The milk is hydrolyzed, then neutralized, filtered, and the liquor is finally concentrated and glucose obtained. The rapidity of the saccharification of the starch depends on, principally the degree of dilution of the mixture of water and starch, the quantity of acid used, the temperature and the pressure under which the operation is carried out. The best conditions have been worked out on a practical scale, and the success of the entire operation depends on their maintenance, for it can be understood that if the conditions are not right, a mixture of dextrins and sugar will easily be obtained instead of glucose. On the other hand it is also possible to obtain products which contain decomposition products of glucose when the reagents are too strong, the temperature too high and the like.

One very important condition in the process is the quality of the water. All the reactions are carried out in an aqueous medium, and it can readily be seen that if the water is not of good quality a poor grade of glucose will be obtained. Thus a soft water is far better than a hard water, for the latter requires a lower consumption of acid. Organic impurities must not be present in the water, as they will contaminate the glucose and darken its color. The presence of iron is a very great inconvenience for the iron produces a bluish coloration in the glucose which is very difficult to remove.

After the starch has been boiled with the saccharifying agent for some time a mixture is obtained which contains water, dextrose (that is glucose), dextrin and other decomposition products of the starch. When this mass is left to itself, a mixture of crystalline and non-crystalline matter is obtained. Solid glucose is obtained just in this manner, that is the syrup which is drawn off from the

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Chemist in Business

By Henry W. Banks, 3rd

Partner, Loomis, Stump & Banks

MENTION the need of a chemist in the production end of a business and almost any manufacturer will say: "Oh, yes! Sure thing. We need him there." But talk about him as part of sales equipment and you get a puzzled look.

What can the chemist do for the selling end of a business? So far he has demonstrated his ability to do two things: (1) Provide new material for advertising copy and (2) supply new merchandising ideas.

From experience, I know that this will be granted by many with some such statement: "Oh, yes, the kind of chemist you are talking about can be of great help to the manufacturer of a technical product."

Such a view provides the big stumbling block which prevents widespread use of the chemist in helping to sell goods. As a rule, it is safe to say that selling ammunition for strictly technical products is best supplied from the storehouse of facts that can be created by the scientific and engineering staff of the manufacturer of the product. They have very definite information to convey to fellow scientific men among their customers. Outside help is not needed, and, in fact, is often resented—quite justifiably.

A selling chemist, looking for advertising material, takes a manufacturer's product as he finds it. He uses his special knowledge in studying the product with a view to telling the consumer something new, interesting or convincing about it from a chemist's standpoint that he believes the consumer would like to know or would appreciate knowing.

He can do this in a number of different ways. Perhaps the most obvious of these ways is the direct testing of a product in such a way as to emphasize some advantage or special point of interest. The story of such a test, makes convincing copy. A good example of the use of this idea is to be found in a recent advertisement of a company producing lubricating oil. Several oils were dropped on a hot plate. The spots of black carbon made by some of these oils told a vivid story. They brought home to the automobile owner the fact that all oils do not have the same carbonizing temperature. The particular oil mentioned in this copy showed no carbon spot at all. The advertiser thus told his story for his own particular oil.

It may be argued that the public at large has little interest in technical matters. Such an argument is hard to believe. Of the twenty million owners of automobiles, about nineteen million can discourse about high test gasoline, high viscosity oil, anti-knock compounds and the life of storage batteries—whether they know anything about it or not. And a good many of them do know a good bit about these things, because by doing so they save money and get better performance from their cars.

The motor car has thus made a certain amount of technical knowledge fairly universal. The radio has done the same thing. The whole prosperity of this country is pretty much built around science and invention. There exists, in other words, a background which is far from hostile to the facts of science, if these facts are properly presented.

One of the most useful aids is the microscope which, in turn, is made effective in advertising copy by the camera. I know of more than a half dozen outstanding advertisements of recent appearance that were based on chemical work in which the chemist made use of a microscope and a camera. These advertisements were on products as widely separated as textiles, shaving soap, cocoa, and paint.

Manufacturers of food products are using copy that talks of carbohydrates, fats and proteins. Some even mention vitamines. Readers of such copy do not know what a vitamine is. As a matter of fact, nobody knows just what a vitamine is. The biological chemist, however, knows what a vitamine does. He should tell that story or furnish the material from which the advertising agent or advertising manager could tell it.

Today, purchasers of food are honestly trying to learn everything possible about proper feeding and nourishment. They really have that desire. We all know they have. They are looking for honest, truthful and scientific facts. The advertisers who give them such facts instead of huge gobs of misleading scientific words are going to get their attention and purchases.

Turn now for a minute to the sales chemist as an aid in merchandising. A certain manufacturer, not long ago, called in an advertising agency for a discussion on a new product. This manufacturer was of the opinion that he could and should sell a certain article. It occurred to him, however, that it would be best to reverse the usual methods of business before going ahead with his idea. That is to say, instead of making a product and then setting out to look for buyers, he was going to locate the buyers first and then make the product the way they wanted it made. This was the job he asked the advertising agency to perform.

The agency called in a chemist to help carry out this assignment. The chemist examined all the products of all competitors and learned why they were making their goods of certain materials. He then found which of them sold the best, and which of them best accomplished the work they were supposed to do. From then on he was able to work out a formula for the new product—not only from the standpoint of popular prejudice and habit, but also from the standpoint of real usefulness in doing a certain job and doing it properly. In this work, he called in an expert microscopist, a mineralogist, a biological chemist, a bacteriologist, and a salesman. In addition to working out a formula that fitted the market, this chemist saved the manufacturer no small amount of money, for he was able to point out a source where a certain raw material could be obtained at a price considerably below that which the manufacturer had expected to pay.

The sales chemist who has his mind fixed on merchandising opportunities will see new markets and new uses not only for popular products but also for those which have lost popularity. Yeast, for instance, is a perfect example of what a chemist can do for a product that had lost sales popularity because of changed buying habits. When women stopped baking, the sale of yeast cakes to the public dropped. But somebody dug up the results of feeding experiments that had been carried on by biological chemists; advertising carried those findings to the public, and presently a great new market for yeast cakes was opened.

These two examples of work that a sales chemist can do in one case for a new product, in another for an old product, point fairly conclusively to the fact that he is a source of merchandising ideas.

There is no doubt that the sales chemist fits into the picture in this new day of selling—this day when selling must be planned in advance in order to insure success and when selling means advertising. Let me summarize the reasons for this assertion:

The sales chemist injects into selling a new point of view—a new way of telling the consumer why a certain article meets his needs. He sees relationships, analogies

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[News and Markets Section]

Chemical Exports Advance in January

Exports of Naval Stores, Gums and Resins Increased Ten Per Cent Over January, 1926—Industrial Chemicals Showed 23 Per Cent Advance—Tendency Upward In All Exports, and Downward In Imports—Methanol, However, Was Imported In Large Quantities—Expanding Market Abroad for Disinfectants—Small Imports of Glycerin —Ammonium Sulfate Shipments Continue Large

(*Special to* CHEMICAL MARKETS)

Washington, D. C., Mar. 9.—Industrial chemicals showed a 23 per cent advance in exports of $2,758,000 in January, 1927, over January, 1926, but imports of $2,659,000 a one per cent decrease. There was a general upward tendency in exports and downward in imports of the majority of chemicals of this group, methanol being the biggest exception with exports small and imports large.

American disinfectants, insecticides, fungicides and similar preparations continued to supply an expanding market with over three times as much sold abroad the current January as January of last year. For the first time this group has been broken up as follows: Nicotine and tobacco extracts including black leaf and other nicotine insecticides, $45,300 (122,000 pounds; other agricultural insecticides, fungicides, and similar preparations including calcium, copper and lead arsenates, paris green, etc., $25,400 (195,400 pounds); and household insecticides, disinfectants, deodorants, germicides, etc., $320,800 (1,435,300 pounds).

Imports of creosote again accounted for over half of all coal-tar imports or $1,000,000 (7,268,000 gallons). Coal-tar colors, dyes, and stains, recorded about 300,000 pounds more exported the current January, than in January of last year although the value was slightly less, total for the month having been $405,000 (1,865,000 pounds). Imports of dyes were likewise more and equalled $644,000 (516,000 pounds).

Sulfur shipments were likewise off one-fifth to 45,000 tons, valued at $898,000. Australia was the largest purchaser of this commodity having taken one third of the total. During January, both outgoing and incoming shipments of coal-tar products were high and almost balanced, $1,931,000 for the former, and $1,910,000 for the latter. In the exports, foreign sales of crudes, benzol, and crude coal-tar pitch and tar, were exceptionally large, amounting to nearly 2,000,000 gallons, worth $550,000 and 150,000 barrels, $800,000, respectively.

Exports of explosives were valued at $278,000 with smokeless powder sales responsible for the reduction having dropped from $182,000 to $2,000. Dynamite exports were rather high with $155,000 (1,000,000 pounds) having been shipped abroad.

On the import side, glycerin fell back somewhat from the large amounts having been purchased from foreign countries during the year when only $170,000 (1,078,000 pounds) of crude, and $220,000 (921,000 pounds) of refined were received. No citric acid or citrate of lime entered the country during January.

Pigments, paints, and varnishes to the value of $1,786,000, 10 per cent more than the January, 1926 figure, left the United States destined for foreign countries while goods valued at $322,000 coming into the country were 2 per cent less. Carbon black sales of $392,000 (4,622,000 pounds) were rather high as were also those of $479,000 (229,000 gallons) or ready mixed paints other than enamels, while the $110,000 (36,000 gallons) of enamel paints, were small.

Like some of the other groups, whereas exports of $1,402,000 (38,000 tons) of fertilizers and fertilizer materials were 17 per cent more than January, 1926 figures, the imports of $5,021,000 (152,000 tons) were 37 per cent less.

The most important change in the outward movement was the continued size of the ammonium sulfate shipments of $809,000 (17,000 tons). Nearly all classes of imports were smaller, but the nitrogenous, calcium cyanamide, calcium nitrate, and sodium nitrate were the most imports reductions, figures for which were: $434,000 (10,000 tons), $165,000 (4,000 tons), and $2,327,000 (47,000 tons), respectively. Receipts of ammonium-sulfate nitrate, were $188,000 (3,000 tons).

Exports of chemicals and allied products advanced 17 per cent from $13,470,000 in January, 1926, to $15,817,000 in January, 1927, while the imports declined 18 per cent from $21,639,000, to $17,630,000. Exports of naval stores, gums, and resins, amounting to $2,850,000 were 10 per cent more than in January, 1926. Of this group, the only class showing a reduction was wood rosin. During the month, shipments of gum rosin were $1,815,000 (86,000 barrels), of spirits of turpentine, $751,200 (1,009,000 gallons), and wood turpentine, $53,400 (83,000 gallons).

Little change was made in the imports of gums and resins, with total values only four per cent under the January, 1926, figure. Out of the $3,371,000 worth of gums and resins received in January, 1927, varnish gums accounted for $2,168,000. Kauri gum shipments were unusually small amounting to $18,000 (85,000 pounds) and shellac about the average, $1,035,000 (2,852,000 pounds.

ANNUAL CHEMICAL DINNER SEPT. 28

The Annual Dinner of All Chemical Societies will be held this year on the Wednesday of the week of the Chemical Exposition at Hotel Roosevelt. The actual date is Sept. 28. This dinner will embrace all technical, business, sales and other societies in any way connected with the chemical industry, and all these societies will co-operate in its success.

The following committee is now at work: Ralph E. Dorland, The Dow Chemical Co., chairman; F. P. Summers, Noil Color & Chemical Wks., in charge of tickets and seating; William Mueller, Commercial Solvents Corp., arrangements; Williams Haynes, DRUG & CHEMICAL MARKETS, speakers; Ira P. MacNair, Soap, publicity and program; A. L. Benkert, Noil Color & Chemical Wks., notices and invitations.

Potassium chloride factory of Marie-Louise Mine, Staffelfelden, France, will have an annual output of 120,000 lb within two years, say French advices.

Terms of Franco-German Potash Contract

Disputes Must Be Arbitrated and Resort to Courts Is Forbidden—President of Hague Court to Name Third Arbitrator if Board Cannot Agree—Contract to Last Ten Years, and Can Be Renewed for Periods of Five Years

(*Special to* CHEMICAL MARKETS)

Paris, Feb. 15—Full text of Franco-German contract regulating production and sale of German and Alsatian potash, which was signed at Paris, Dec. 29, with approbation of the French Ministries of Agriculture and Public Works, embodies the terms of the Lugano accord, signed April 10, 1926, which was a prolongation, with certain modifications and additions, of a provisional agreement due to expire May 1, 1926.

Terms of the present contract, which are virtually identical with those of the Lugano accords, may be briefly summarized as follows: Its parties comprise the "Deutsches Kalisyndikat G. m. b. H. of Berlin, controlling the German industry, and three French organizations known as "La Societe Commerciale des Potasses d'Alsace", "Les Mines Domaniales de Potasse d'Alsace", "La Societe anonyme des Mines de Kali-Sainte Therese." The home market, reserved to each national group, includes the national territory, colonies, protectorates and districts under mandate. Accords will be made relative to the potash in the reserved territories which enters into manufactured products for exportation. Control of potash salts will be on the basis of their content of K_2O. The export quotas will be 70% to the German group and 30% to the French group, until an annual total of 840,000 metric tons of K_2O is obtained. For the excess over this total the German and French groups will participate equally. If in five years this total should not be reached, the maximum figure will be the highest of any one of the five years and the excess, to be equally shared, will begin from that total.

Common sales organizations will be established and prompt communication of orders and deliveries will be made to the Commission of Control. In case of dispute as to the correctness of figures submitted, adjustment will be made by arbitral committees. Resort to judicial tribunals for the settlement of any difference among participants in the cartel is expressly forbidden. If in any matter of controversy the selected arbiters cannot agree upon a third member of their board, the President of the Court of Arbitration at The Hague will be asked to name him.

Sales prices for each country will be fixed on the basis of proposals made by the executives of the sales organizations, taking into account the conditions peculiar to each country. Infractions of the agreement will be punished by a fine equal to five times, and for a subsequent offense to ten times, the value in controversy. The contract is to last ten years, beginning May 1, 1926, with the privilege of annulment at the end of the seventh year. If not cancelled by the tenth year it will be tacitly renewed for periods of five years. A translation of the text of the contract, the original of which was furnished by the Secretary General of the "Societe Commerciale des Potasses d' Alsace", will be furnished upon request.

An organization in Antwerp claiming to own exclusive franchise for the manufacture of alcohol for forty-nine years invites participation of American capitalists or alcohol manufacturers. Cheap and plentiful supplies of raw material are said to be available for making both potable and commercial alcohol.

YEAR'S METHANOL OUTPUT

Washington, D. C., March 9—January production of crude methanol was 755,473 gallons compared with 733,678 gallons in December and 752,292 gallons in January, 1926. The table gives the production, shipments and stocks of acetate of lime and crude methanol, and refined methanol, for thirteen months ending in January, 1927.

FORM CHEMICAL INSTITUTE

Chemists will be brought together every Summer at a center of technical education by Institute of Chemistry, says George D. Rosengarten, president, Philadelphia. The Chemical Foundation, Inc., and the Pennsylvania State College have agreed to furnish the funds to put the plan in operation for the first session, to be held during July, 1927, at Pennsylvania State College. Northwestern University has requested the privilege of being the second university to co-operate and the session of 1928 is to be held at Evanston.

Purpose of the Institute of Chemistry is to offer a series of lectures and demonstrations whereby those in attendance may be brought quickly up to date in fields both within and outside their own specialty, and to afford facilities for teachers to acquire the latest information in chemical science, as well as to benefit from the contacts with industrial and consulting chemists.

Chemists Club has made the following nominations for officers of the club for 1927: President, Theodore B. Wagner; vice-president, resident, Charles R. Downs; vice-president, non-resident, E. R. Weidlein; treasurer, A. G. Robinson; secretary, Robert T. Baldwin; trustees, for three year term F. E. Barrows, J. W. H. Randall.

Richard Gesell has purchased the interest of Frank Ehrman in Ehrman-Strauss Co., New Yorks, drugs and chemicals. Mr. Gesell is son of William H. Gesell, of Lehn & Fink Products Co.

Charles L. Read, Seaboard Chemical Co., New York, left this week for a three weeks vacation in Florida, this being the first vacation he has taken in several years.

ACETATE OF LIME AND METHANOL

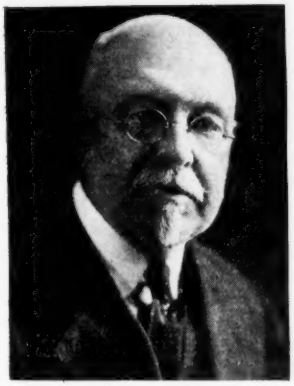
Crude Methanol Plants

	—Acetate of Lime— (in pounds)			—Crude Methanol— (in gallons)	
	Production	Shipments	Stocks, end of month	Production	Stocks end of month
1926		United States			
January	14,425,023	1[illegible],338,967	19,2 0,643	752,292	1,400,994
February	12,905,023	10,525,277	21,715,325	[illegible]83,707	1,176,337
March	14,313,556	9,953,939	25,991,414	738,958	1,280,625
April	14,226,364	11,902,753	28,522,689	764,670	1,474,624
May	13,481,618	13,658,358	28,317,772	67[illegible],674	1,414,577
July	10,964,282	14,74[illegible],461	22,373,174	553,050	888,923
July	10,964,392	14,741,461	22,373,174	553,050	888,923
August	12,[illegible]79,916	14,524,284	19,951,364	589,828	622,456
September	11,770,154	11,285,265	23,240,592	6 0,393	486,199
October	14,002,232	16,012,910	17,745,783	712,309	442,998
November	14,100,075	15,509,609	16,327,559	720,798	463,049
December	[illegible]3,468,395	14,[illegible]87,301	16,420,621	733,[illegible]78	(1) 278,219
Total, year	157,077,277	156,139,319	.....	8,095,953	.....
1927					
January	14,180,564	10,067,660	22,196,923	755,473	(1) 397,999

DR. IRA REMSEN DEAD

Dr. Ira Remsen, 81, died at Carmel, California, Friday, March 4, from old age. Dr. Remsen was born in New York, Feb. 10, 1846, and was educated at College of the City of New York, College of Physicians and Surgeons and Goettingen. In 1904 he received the gold medal of The Society of Chemical Industry of Great Britain for his discovery of saccharin. He contributed many other discoveries to industrial chemistry but never would apply for patents.

Dr. Remsen was professor of chemistry at Williams College from 1872 to 1876. He was then called



to Johns Hopkins University, where the great work of his life was done. He was B. N. Baker professor of chemistry from 1876 to 1918, director of the chemical laboratory from 1876 to 1908, secretary of the Academic Council from 1887 to 1901, president of the university from 1901 to 1912, and thereafter president emeritus and professor emeritus.

Dr. Remsen founded in 1879 and was for more than forty years editor of "The American Chemical Journal.' He served as president of American Chemical Society and American Association for the Advancement of Science, and was one of the few foreign members of the London Chemical Society.

President Roosevelt appointed Dr. Remsen as head of a board to pass upon the question of the harmfulness of benzoate of soda and other chemicals as food preservatives, and in that capacity found himself at times at variance with Dr. Harvey W. Wiley, who had charge under the administration of the pure food law. He was a vigorous opponent of the use of poison gases in warfare and advocated their prohibition by all civilized nations. He pointed out the menace to public health of organic matter in the air in rooms heated by furnaces and stoves. He investigated the manufacture and use of glucose for the National Academy of Sciences, and the quality of its water supply for the City of Boston.

In September, 1923, he received from the American Chemical Society its much coveted Priestley Medal, awarded by it triennially for distinguished services in chemistry. He received the degree of LL. D. from Columbia, Princeton, Yale, Toronto, Harvard, Pennsylvania State College and the University of Pittsburgh; Ph. D. from Goettingen and D. C. L. from the University of the South. He married in 1875 Elizabeth H. Mallory, of New York, who survives him with their two sons, Ira Mallory Remsen and Charles Mallory Remsen.

February Dye Imports Increase to 312,277 lbs.

Fall Below Those of Year Ago, But Surpass January by 215,667 lb—Total for Two Months At 508,897 lb Valued at $448,751—Germany Holds Lead as Origin With Switzerland Coming Close Second—Helindone Black RD Leads in Quantity with Rhodamine B and Ciba Red R Both Passing 10,000 lb—Stocks in Warehouse at Close of Last Year, 360,488 lb of Dyes and 562,536 lb of Intermediates

Imports of dyes and intermediates during February exceeded those of January by a large amount, but fell somewhat short of those of a year ago. Imports of dyes for consumption during the past two months are as follows:

January, 1927 196,620 pounds valued at $186,387, as against 300,441 pounds valued at $283,635 in 1926; February, 1927 312,277 pounds, valued at $262,364, as against 369,045 pounds valued at $377,638 in 1926; total 2 months 508,897 pounds valued at $448,751, as against 669,486 pounds valued at $661,273 in 1926.

Imports of coal-tar dyes for the month of February, 1927, by ports are New York, 298,919 pounds, valued at $248,168, and Boston, 13,358 pounds, valued at $14,196 or a total of 312,277 pounds valued at $262,-364.

Five leading dyes, by quantity, imported during February are as follows: Helindone printing black RD paste, 25,000 pounds; Rhodamine B extra (single strength), 13,200 pounds; Ciba red R paste, 12,566 pounds; Cibanone orange R (single strength), 8,876 pounds; Vat olive R (single strength), 8,705 pounds.

Dyes and intermediates remaining in bonded Customs warehouse at the end of the last six months were as follows:

Dyes and Colors—July 31, 1926, 512,186 pounds; August 31, 1926, 557,852 pounds; September 30, 1926, 395,535 pounds; October 31, 1926, 281,320 pounds; November 30, 1926, 303,321 pounds; December 31, 1926, 360,488 pounds. Intermediates—July 31, 1926, 781,796 pounds; August 31, 1926, 690,031 pounds; September 30, 1926, 590,520 pounds; October 31, 1926, 557,257 pounds; November 30, 1926, 539,561 pounds; December 31, 1926, 562,536 pounds.

Per cent of dyes by country of shipment is as follows:

Germany, 49.5 per cent; Switzerland, 33.9 per cent; Belgium, 4.9 per cent; England, 4.6 per cent; France, 1.3 per cent; Italy, 0.3 per cent; Canada, 5.3 per cent; Holland, 0.2 per cent.

Spirits of turpentine and rosin prices in France, March 1, were 530 francs per 100 kilos for spirits of turpentine with the market firm. Rosin (WW) was weak at 315 francs per 100 kilos. These prices are equivalent to $.664 per gallon for turpentine and $12.99 per 280 pounds for rosin. Exports of French turpentine and rosin totaled 1,638 metric tons and 7,199 metric tons respectively during January. Metric ton equals 2204.6 pounds.

Establishments engaged primarily in manufacture of glue or gelatin reported, for 1925, a total output valued at $25,763, made up as follows: Animal glue, 70,167,000 pounds, valued at $9,854,099; vegetable glue, 64,390,000 pounds, $3,-777,339; fish and casein glues valued at $2,543,054; flexible glue, 799,700 pounds, $119,224; gelatin (edible and nonedible), 12,113,200 pounds, $4,-678,205; and miscellaneous products valued at $4,792,057.

National Fertilizer Association announces that January production of fertilizers was 18.4 per cent less than in January, 1926, and 6.5 per cent less than for December, 1926. Stocks were 2.9 per cent larger Jan. 31 last than Jan. 31, 1926. Shipments to dealers in January showed a decrease of 45.9 per cent from shipments in January, 1926.

Congress passed the caustic acid bill and the President has signed it. The bill was favored by the American Medical Association and was designed chiefly to require the use of poison labels on lye sold for household use. The American Drug Manufacturers' Association in protesting against the bill offered

Coal Strike Would Have Little Effect

Industry Views Situation Without Alarm, Owing to Stocks on Hand—Non-Union Production A Potent Factor In Coal Market—Survey by National Association of Purchasing Agents Indicates 57,450,000 Tons on Hand Feb. 1, Average of Forty Days Supply In All Industries

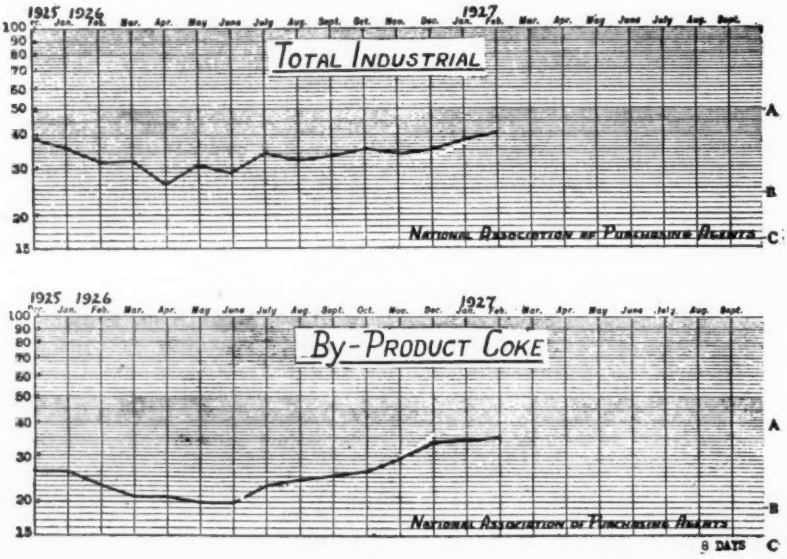
January showed a slight decrease in industrial consumption of coal. The total tonnage amounted to 44,671,000—an average daily consumption of 1,441,000 tons. The survey made by National Association of Purchasing Agents indicates a total of 57,450,000 tons on hand, as of Feb. 1, an average supply on hand of forty days in all industries.

Slight decline in production took place in January when 56,368,000 tons of bituminous coal were mined, and 6,760,000 tons of anthracite were produced, the combined total amounting to 63,128,000 tons.

Adjournment of the joint meeting of Operators and United Mine Workers' representatives, without an agreement having been reached as to their relation after April 1, leaves their differences still unsettled. Industry and the public, however, are interested to note that the operators have finally agreed among themselves what stand should be taken to offset the demand of the miners that the Jacksonville Wage rate be continued after April 1. The rapid growth of non-union production has evidently aroused a communal interest among the mine owners in the central competitive field. Their differences of opinion seems to have been subjugated by the realization that non-union competition is no longer a theory, but a very potent factor in the coal market. Sliding wage scale presented for consideration at the Miami Conference is an endeavor to equalize the competitive situation now existing between producers in Indiana, Illinois, Ohio, and Western Pennsylvania, and Southern non-union districts.

Both buyers and sellers of coal should welcome a more general knowledge of the problems that must be confronted. If the estimates of potential non-union production are reasonably accurate, the strike, if called, will have little if any, effect on general business activity. The absence of alarm with which industry is viewing the trend in the coal situation is well reflected in the conservative manner in which stocking has been carried on. It is certain that stocks on April 1 coupled with available non-union production, would seem ample provision for any ordinary emergency that might arise. It is hoped that before that date, the conflicting interests will arrive at an understanding that will provide a reasonable wage, an equitable profit for the operators, and a fair price for the community.

Stocks of coal on hand on the first day of each month are shown in the chart, as well as A, March 1922, Coal Strike Starting; B, March 1st, 1923, Jacksonville Wage Scale Signed; C, June 1920, Two Months of Car Shortage.



FARM EXPLOSIVES FAST SELLING UP

In 1914, the U. S. Department of Agriculture reworked about 100,000,000 tons of war explosives for agricultural use, putting these out under the two brands, "Pyratol" and "Sodatol."

These surplus materials, which have been, of course, competitive with the production of the regular explosive manufacturers in the agricultural field, have been sold largely through the activities of county agents. It is understood that while originally it was expected that these stocks would carry through to the end of 1928, present advices are to the effect that this material will all be worked off to the ultimate consumer by the end of 1927.

Dr. Alfred Eisenstein of Vienna, Austria, and H. B. Jespersen of Copenhagen, Denmark, are spending a few weeks with Arthur D. Little, Inc., Cambridge, Mass., with whom they are associated as European correspondents and consultants. C. L. McArthur, formerly Chief Technologist for F. X. Baumert Co., Inc., cheese manufacturers, has joined the staff of Arthur D. Little. Mr. McArthur spent several years as research bacteriologist for the Government and was at one time head of the department of bacteriology, University of Arkansas.

The use of benzol or methanol in paint materials is prohibited in assembly bill No. 333, recently introduced in the New Jersey Legislature by Assemblyman Comstock. The bill also requires that percentages of the following chemicals contained in paint materials be stated on labels: — Lead and its compounds; benzol, methanol, wood alcohol or methyl alcohol; petroleum or mineral spirits, such as naphtha, gasoline, benzenes, flashing below 100 degrees Fahrenheit, and turpentine.

Rate on phosphate rock, in carloads, from Brewster, Fla., to Pelham, Ga., has not been found unreasonable by the Interstate Commerce Commission in a decision rendered in the case of the Pelham Phosphate Company against the Atlantic Coast Line Railroad Company. Complaint was dismissed.

Alums and other aluminum compounds to the aggregate value of $11,564,508 were manufactured in the United States in 1925, an increase of 4.5 per cent compared with $11,066,611 for 1923.

DROP MUSCLE SHOALS BIDS

Washington, March 9—Bids of American Cyanamid Co. and Farmers Federated Fertilizer Association for Muscle Shoals have been rejected by House Military Committee. Action came with the unanimous adoption of a report from a subcommittee holding that the offers failed to meet requirements which were deemed necessary to safeguard the public interest in leasing the properties. The report recommended that an effort be made to obtain an operating contract for production of fertilizer at the shoals by the next Congress in the event that no satisfactory bids were received in the meantime. The report said that in the event all efforts to satisfactorily dispose of the properties failed the military committee should give careful consideration to operation of the project by the Government.

Newport Light Fast Brown R, now on the market, is for dyeing cotton and rayon for use in upholstery and drapery fabrics, because of its very good fastness to light and good level dyeing properties. It is particularly recommended for dyeing unions of cotton and rayon even in heavy shades. It is practically unaffected by iron and Monel metal and is suited for use in machines fitted with these metals, says the company. It dyes unions of cotton and wool, cotton and silk, to about the same shade at the boil. Dyed at 180°F. somewhat yellower and brighter shades are obtained. It discharges white.

E. I. du Pont de Nemours & Co. have placed on the market Leucogene W for use in the discharge paste, applied to indigo dyed materials. Reduced indigo rapidly reoxidizes back to blue causing trouble during the washing. Leucogene W prevents reoxidation of the reduced dyestuff by reacting with it to produce a yellow dyestuff which is soluble in hot, dilute alkaline solution and can be washed out when convenient.

By-product coke production in January declined slightly. The 76 active plants produced 3,700,000 net tons, a decrease of only 6,000 tons compared with December. Bee-hive coke plants increased their output, the January total amounting to 787,000 tons. The production of coke amounted to 4,487,000 tons, the by-product plants contributing 83%, and the bee-hive plants, 17%.

Cottonseed Oil Outlook

The following market letter and chart by W. A. Storts of Edward Flash Co., are a resume of the cottonseed oil position for February.

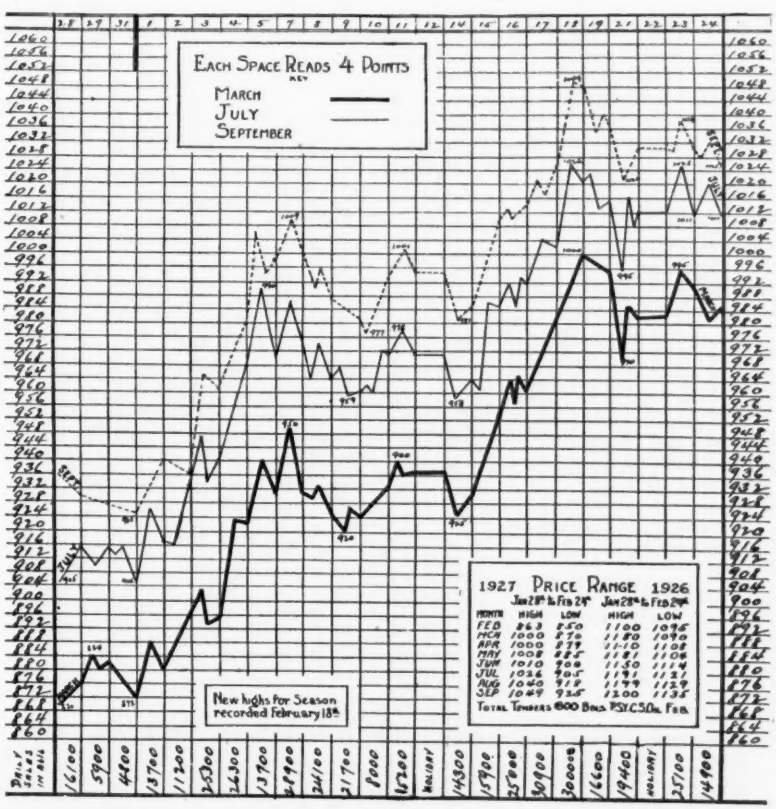
February 24, 1927.

Census report, February 17th, covering January statistics on cottonseed products, indicated January consumption 351,000 bbls. refined oil, slightly under previous January, and a notable fact that, although price during last fall was lower than the previous fall, the actual consumption of refined oil for first six months of this season is 205,000 bbls. less than for same period last season. January seed receipts, in face of the cry that seed was held back, amounted to 608,200 tons, quite a little more than generally expected and, we believe, insures our estimate that seed receipts for the season will run over six million tons. After February 1st, last season, 660,000 tons were received at mills. A safe estimate this season, we believe, approximates one million tons.

The visible supply, seed, crude and refined, February 1st, in the aggregate, was about the heaviest on record for that period and more than 600,000 bbls. over the visible, February 1, 1926. The "visible," February 1st, provides for consumption of 350,000 bbls. per month for last half of this season (comparing with an actual monthly consumption of 243,000 bbls. same periol last season). On a basis of 350,000 bbls., which we greatly doubt, the carryover August 1st will be represented by seed receipts, February-July inclusive.

The market this month has had very good undertone, advancing continually, indicating that heavy consumption is taking place. New highs for the season were recorded on February 18th, and so far there has been very little recession. Crude oil is 8½c, sales, practically all territories, with rumors slightly higher for later deliveries.

A most unusual condition prevails this season—long interest is built up everywhere, with very heavy stocks, etc., and, unless consumption is record breaking, as we go through remaining six months, it is our belief that, as the Summer approaches, considerably lower prices will prevail. Of course, much will depend upon the price of lard and other fats and also the cotton crop prospects in the late Summer, but the general situation appears bearish to us, and we believe sales of September oil on strong spots will show very satisfactory results.



[The Industry's Finances]

COMMERCIAL SOLVENTS STRENGTH HIDDEN

Like Other Chemical Companies, Says Wall Street Journal, Earnings Are Buried In New Plants, Additions and Improvements—Investments During 1926 Show Large Depreciation Charges—Butyl Alcohol the Company's Main Product

Commercial Solvents Corp.'s strength is shown by studying the annual report for 1926 in detail, says "Wall Street Journal." Net profit after taxes and reserves was $1,707,791, equivalent to $14.58 a share on 108,861 shares of Class B stock, after deducting dividends on Class A stock and the preferred which were retired during the year. Class A stock was converted into Class B. Operating profit was $2,556,556, equal roughly to $23 a share on Class B after taxes. From this is deducted a tax reserve of $361,917 and other miscellaneous deductions amounting to $486,847 which included interest, discounts. These reserves are in the main actually part of income available for stock. Interest charges on notes last year amounted to about $140,000 and will not recur this year since the notes have been called.

Earnings in the last quarter of 1926 were $543,147 after taxes and all deductions, equal to over $5 a share on the Class B stock and may be taken as indicating conservatively the real earning power of the company, in excess of $20 a share annually, now that plant additions are increasing production. The stock is selling around 245. The Wall st. authority continues:

Commercial Solvents, like the majority of chemical companies, buries a considerable portion of its earnings in property. Since sums deducted for depreciation are not given separately, it is possible only to estimate the amount of these charge-offs. Chemical companies, on account of the rapid changes in the industry, are justified in spending large sums to keep plants up to date and to install new equipment and processes as they are discovered. Theoretically a very high rate of depreciation on plants and equipment is permissible. Most of the important chemical companies take full advantage of this and the money so spent directly increases earning power. The conservative valuation at which the property is carried on the books after depreciation reserves have been deducted, frequently hides real values that have been built up by ploughing back profits.

In 1923 Commercial Solvents carried its land, plants and machinery at $2,102,450. In 1924 the Peoria plant was built at a cost of about $1,000,000 and additions to the plant completed in April, 1925, doubled its capacity. Another addition completed in October, 1925, again doubled capacity. A large new plant was built last year at Terre Haute. At the end of 1925 after all these additions, plants were carried at $2,345,131, although their appraised value at the time was $4,700,000. At the close of 1926 plant valuation on the books was $3,512,552. This was after the expenditure during the year of over $2,000,000 on an additional solvents and by-products plant, which will be completed in March, 1927, at a total cost of $3,000,000. Since over $2,000,000 was spent on plants during the year and plant account increased only about $1,200,000, it is evident that depreciation reserves for the year amounted to approximately $800,000. The new plant will increase the total butanol output of the company by 40% and also will produce ammonia at a low cost by utilizing by-product hydrogen.

[Foreign Exchange]

	Par	Current
Great Britain (pound sterling)	4.866	4.87
France (franc)	.193	.039
Italy (lira)	.193	.040
Belgium (franc)	.198	.139
Denmark (krone)	.268	.266
Czechoslovakia (crown per 100)	20.30	2.96
Holland (florin)	.400	.400
Poland (zloty)	.193	.120
Norway (krone)	.258	.259
Spain (peseta)	.193	.169
Sweden (krone)	.268	.267
Switzerland (franc)	.193	.192
Argentina (peso)	.414	.421
Brazil (milreis)	.324	.119
Japan (yen)	.499	.491
India (rupee)	.485	.362
China ($ilver dollar, Hongkong)	.789	.494
(Tael—Peking, silver)	1.146	.655
(Tael Shanghai, silver)	1.986	.611

Congoleum-Nairn, Inc., shows net profit after charges but before taxes for 1926, $573,429. Surplus is $12,260,351.

NATIONAL LEAD "MELON"?

National Lead Co. has earned an average of $16.83 a share for eight years preceding 1925, more than double the dividend rate, and stockholders are expecting a "melon" cutting. One of the difficulties in the way of a stock dividend or split-up is the fact that there are 240,376 shares of preferred, having the same voting power as the common and in effect controlling the company. But it is thought that in view of the large earnings and surplus any opposition from this source that might develop could be overcome.

Federal Circuit Court of Appeals, decided that E. I. du Pont de Nemours & Co., infringed the patent of Henry Pauling, an Austrian, for denitration of sulfuric acid and the concentration of nitric acid. The du Pont Company was ordered to submit an accounting of profits to Southern Electrochemical Co., owner of the patented process.

Employment figures in chemical industry for January show 120 chemical plants gave their December employment at 30,629, decreasing in January to 30,529, a loss of 0.3 per cent. In these plants, also, payrolls decreased from $834,096 in December to $818,130 in January, 1.9 per cent.

Lacquer Chemicals, Inc., San Francisco, will start work soon on a chemical plant in Richmond, Cal., for materials for lacquer. Stauffer Chemical Co. has transferred a ten-acre tract to Lacquer Chemicals, Inc., as a site. The plan represents an investment of $200,000.

Devoe & Raynolds Co., Inc., New York, reports net sales for 1926, of $11,374,206, against $11,304,161 in the year before. Net profit amounted to $900,055, after charges and Federal taxes, against $698,018 in 1925.

Hazard Advertising Corp., New York, will direct the campaign of Gibraltar Lacquer Co., Brooklyn, N. Y., to advertise Gibraltar Lacquer to the automotive and furniture finishing industries.

Champion Chemical Co., Springfield, O., manufacturer of funeral directors, sundries and supplies, appointed Geyer Co., Dayton, O., advertising agency, to direct its advertising account.

Textile mill strikes in Passaic have all been settled including the one at United Piece Dye Works, on promise of officials not to discriminate against former workers.

[Stocks & Bonds]

	1926 High	1926 Low	1927 High	1927 Low	Current Bid	Current Asked	Ann. Div.
*Air Reduction	146¾	107⅛	151	143⅛	145	148	5
*Allied Chem.	148¾	106	143⅞	131	139½	140	6
*Allied Chem pfd	122¾	118¾	122	120½	121⅛	122½	7
Am Ag Chem	14⅝	9	13¾	12	12¾	13	
*Am Ag Chem pfd	96½	35⅝	51¾	39	40½	41⅝	
*Am. Can.	63¼	38⅞	50¾	45⅝	48⅝	49	2
*Am Can pfd	130⅛	121	129¾	126	128¾	130	7
*Am Cyan "A"	46	36⅛	40	32	35	40	
*Am Cyan "B"	47	35¼	35	32	34	35	
*Am Linseed	52⅞	25⅝	30½	20¾	23½	23⅞	
*Am Linseed pfd	87	68¾	71½	54	58⅞	59½	7
*Am Metals	57⅝	42¼	44	41½	41⅝	41⅞	3
*Am Metals. pfd	120	113½	112	107	109	111⅜	7
Am. Bayon Prod.	35¼	29¾	35¾	29¾	...	...	
*Am Smelting	152	109⅝	153¼	132⅝	150¾	151	8
*Am Smelting pfd	122⅝	112⅞	122	120¼	120½	121½	7
*Am Zinc	12⅛	5½	10	8½	9⅝	9⅞	
*Am Zinc pfd	54½	20	51¼	42	47½	48½	
Anglo Chil. Nitrate	101	97½	100⅛	95¼	95½	...	
*Archer-Dan-Mid.	34⅞	38	42	40	40	40¼	3
*Archer-Dan-Mid pfd	108	100	108	105	106¾	107¾	7
*Armour Del pfd	97⅞	90¼	97	91	96	96¾	7
*Atlas Powder	64	54	63	58	60	61	4
*Atlas Powder pfd	97⅞	98	100	98	100	100¼	6
*Brooklyn Un Gas	98	68	93¾	89⅞	91¾	92	4
*By-Products Co.	93	53	75	66	70½	74	2
*By-Products Co. pfd.	...	...	108	105	108	...	9
*Calla L & Z	2⅝	1⅛	2⅝	1⅛	2	2⅛	2
Canad. Ind.	20	16¼	16⅞	14	16⅞	...	
Canad. Salt	145	131	115	105	105	115	1
Casein Co.	...	...	176	149	170	175	6
Celluloid Corp	26	16	22	16	19	21	
Celluloid Corp pfd	68	55	73	63	68	72	
*Certainteed Prod	49½	36⅛	48⅞	42	47	47½	4
Charcoal Iron	33⅓	24	20	8	10	20	
Chesebro Mfg. Co.	78	65	78	73	75½	78	
Clark Co. Fred	5	2¾	4	2	2½	4	
Cleve Cliff Iron	75	69½	75	69	70	75	
*Columb Carbon	70¾	55⅝	85	66⅞	80	81	4
*Com Sol B	237	118¼	273	223	266	269	8
*Cont Can	92½	70	73¼	68	69⅝	70	5
*Cont Can pfd	126	117½	125	120	125	125½	7
*Corn Prod	51⅝	35⅝	52⅝	46⅞	51¾	51⅞	2½
*Corn Prod pfd	130¼	122½	130	128	128	129½	7
*Davison Chem	46¾	27⅛	32¼	26½	29	30	
*Davison Chem. pfd	...	...	43½	43	43½	43½	
*Devoe & Rayn A	104½	31	42⅝	37¾	38½	40	2.40
*Devoe & Rayn B	105	40	107	103	103	106½	
*DuPont deb	110⅛	100¾	109½	105½	108	109⅛	6
*DuPont de Nem	181½	157	195	168	191	192	8
*Eastman Kodak	136¾	106⅝	134½	126¼	132	132½	8
*Freeport Texas	36	19⅝	46⅜	34	43¾	44	2
*Gen Asphalt	94¼	50	96⅝	77½	92¾	93¾	
*Gen Asphalt pfd	130	94⅞	144⅞	120	135	141	5
*Glidden.	25¾	15⅝	21⅝	18½	19⅞	20	2
*Gold Dust	56½	41½	47½	42½	44	45	
Grasselli	145	120	130	125	125	130	8
Grasselli. pfd.	103½	102	103	100	101	103	6
Hercules Powd pfd	115	110	118	115	115½	117½	7
*Household Prod	48⅝	40	49⅛	43¼	47¾	48	3⅛
Industrial Rayon	19⅞	10½	7	5	6½	7	
*Int Agr	26¼	9¼	10⅝	8½	9⅜	10	
*Intl Agr pfd	95	57	64	60	61	64	7
*Int Nickel	46¾	32⅝	44	38¼	41⅛	41⅜	2
*Intl Salt	84⅝	61⅓	72	65	69¾	71	6
MacAnd & Forbes	46¼	40	41½	40	66	71	
*Mathieson Alk	106⅛	62½	95⅜	82	91	92¼	4
*Mathieson Alk pfd	105	100	105	103	100½	106	7
Merck & Co.	...	...	86	65	82	85	
Merrimac	83	72	80	73	75	80	10
*Natl Dist	34	12⅓	27½	17	25	25⅓	
*Natl Dist pfd	73⅓	57	52½	43⅓	50¼	52¾	
*Natl Lead	181	138	186¼	160	181	182	8
*Natl Lead pfd	120	116	118½	117	117	118¼	7
N J Zinc	214⅓	180	206	202	203	206	
Niag A pfd	...	...	...	...	80	85	
*Owens Bottle	99¾	53¾	80⅞	75⅓	79	79⅓	5
Penn Salt	91	71	77	74	76	77	5
*Peoples Gas Chi	131	117	129	126	129¼	130	8
Proc. & Gam	163	142½	159	157	159	...	
Royal Bak Pdr	213	190	179	161	170	178	2
Royal Bak Pdr pfd	105½	102	102	99	100	102	6
Shawinigan	191	167½	170	168	170	...	
*Sherwin-Williams.	108	108	109	105⅞	106	107	
*St. Joseph Lead	48⅛	36⅝	43⅞	40¾	43	43¼	3
Silica Gel	22¾	11⅞	17½	16	17½	...	
Swan & Finch pfd	...	...	30	20	20	30	
*Swift & Co.	110	110	147¾	146	117½	147¾	
*Tenn C & C.	16	10⅞	13¼	10⅝	11⅝	12¼	1
*Texas Gulf & S	142	119½	175½	173	175	175½	10
*Union Carbide	100¾	78	118	98¾	113¼	113½	6
*United Dye pfd	58	58	49	30	30	33	
Un Gas Imp	144½	84⅛	108	106	106½	108	
*U S Gypsum	166	126	110	107	107½	110	
*U S Ind Al	84½	45⅝	89	77⅛	85⅛	85⅛	5
*U S Ind Al pfd.	114⅝	90¼	110¼	108⅝	109¾	110	7
*Va Car 6% w i	69	31⅝	36⅝	31	31	32⅝	6
Will & Baumer	...	...	16½	15	16½	...	

A. KLIPSTEIN IN DYE MERGER

A. Klipstein & Co. have absorbed the business of Dunker & Perkins Co., and the offices of Dunker & Perkins Co. have been moved to 263 Summer st., Boston. New telephones Liberty 5246-7-8.

Charles H. Dunker and his staff will join Boston office of A. Klipstein & Co. Stocks for immediate delivery and the laboratory service heretofore maintained by Dunker & Perkins Co. will be continued. Charles H. Dunker was president of Dunker & Perkins Co.

A. Klipstein & Co. will broaden their field by means of the enlarged organization for distribution of dyestuffs, both in Boston and New York, where the offices are located at 644 Greenwich st.

Gold Dust Corp.'s head office in Canada, which was moved from Hamilton to Montreal, will be moved back to Hamilton, and factories at Hamilton and Montreal will be run as heretofore. The former F. F. Dalley Co., Hamilton, was acquired in 1926.

American Cyanamid Co. has declared a quarterly dividend of 20 cents on A and B shares, quarterly dividend of $1.50 on preferred, and extra dividend of 10 cents, all payable April 1 to stockholders of record March 15.

Special permits must be obtained from prohibition administrators for the sale of completely denatured alcohol in quantities of one barrel, one drum or more.

International Agricultural Corp., New York, appointed Ferry-Hanly Advertising Co. to direct its advertising account. Poultry and farm papers, newspapers and magazines are being used.

General Asphalt Co. reports net income for 1926, $2,001,991 after charges and Federal taxes, compared with $1,521,005 for 1925.

A. D. McIlvaine, formerly with United States Gypsum Co., Chicago, has joined the copy staff of the Chicago office of Gardner Advertising Co., Inc.

Paraffine Companies, Inc., San Francisco, reports for 1926 net profit of $1,111,967, after charges and taxes, against $893,278 in 1925.

Pratt & Lambert's net profit in 1926 was $1,339,503, after charges and Federal taxes, compared with $1,336,657 in 1925.

Bon Ami Co., New York, and subsidiaries, reports net profit of $1,050,393, after charges and Federal taxes.

[Industrial Chemicals]

BUTANOL HIGHER; MARKET GENERALLY FIRM

Denatured Alcohol Very Weak—Glycerin Also Weak—Zinc Sulfate Firmer —Alkali Makers Firmer in Schedules—Chlorine Steady—Ammonia Unchanged—Copper Sulfate, Carbon Tetrachloride and Epsom Salts Very Strong at Unchanged Prices

Advanced
Alcohol Butyl, ½c lb.

Declined
No declines

Trend of the Market

	Today	Two Weeks Ago	Last Month	Last Year	War Peak	Pre-War
Acetic Acid, Glacial, c-l....lb	.11⅞	.11⅞	.11⅞	.11½	.19½	...
Sulfuric Acid, Tanks 66° ..ton	15.00	15.00	15.00	14.00	55.00	20.00
Amm. Sulfate c-l NY 100lbs	2.50	2.50	2.50	2.90	7.50	2.65
Bleaching Powder, c-l ..100lbs	2.00	2.00	2.00	2.00	8.50	1.50
Copper Sulfate c-l NY....100lbs	4.75	4.75	4.75	4.20	20.00	4.60
Potash Caustic c-l Imp. ....lb	.07⅛	.07⅛	.07⅛	.07⅛	.87	.08
Soda Ash, 58 p.c. c-l ..100lbs	1.94	1.94	1.94	1.94	3.50	.60
Caustic Soda, 76 p.c. c-l 100lbs	3.66	3.66	3.66	3.66	9.50	1.42
Potassium Bichromate .....lb	.08¼	.08¼	.08¼	.08¼	4.65	.06
Sodium Prussiate .....lb	.12	.11	.11	.10	1.25	.18
Average	3.013	3.012	3.012	2.898	10.79	2.99

Current Quotations and Comments on Specific Items, Pages 386-396

Interesting developments were lacking in industrial chemicals during the past month. Increased weakness in alcohol with makers cutting the supposed schedule very sharply and the actual bottom of the market really unknown, as well as a similar weakness in glycerin were features. Increasing strength has developed in many chemicals that quite often develop weakness due to large stocks. Thus Epsom salts is exceedingly firm, copper sulfate is in the same position with the heavy consuming season at hand, carbon tetrachloride stocks are low and prices very firm. Barium chloride is still depressed in price due to large stocks of imported material on hand.

Caustic soda and soda ash are moving in very large volume, and although supplies in most directions are still very large and firmer spot market exists in most localities. Chlorine is firm in all directions with makers reporting a steadily expanding consumption due to new fields opening up widely. Ammonia is steady but prices remain at recent low levels. Makers do not anticipate any lower prices and expect an advance when the Summer demand sets in during June. Ammonium chloride is moving in very large volume but the large imports keep the price situation at low figures. Tin salts are following the movements of the metal and are now at high figures. Zinc chloride is easy with importers offering at low prices. Domestic factors have experienced considerable competition from a large smelting concern that has entered the market for carlots of solution. Zinc sulfate is very firm at the recent advance caused by makers determined to realize a profit.

Butyl alcohol is higher from the maker due to a higher corn market during the past month. Demand is increasing steadily and consequently the production of acetone as a by-product is also increasing. This material is moving into consumption readily at unchanged prices, due largely to an increasing export demand. Methanol is steady in most directions. Rumors of price cutting on pure methanol and methyl acetone were current but unconfirmed. Stocks of pure have been plentiful for some time due to the heavy stocks of imported material brought in before the duty advance. It is likely that material may have moved at lower prices in some directions but it is not known whether it was imported or domestic material. However, the market is not definitely lower but rather unsettled.

HAMBURG PRICES FIRM

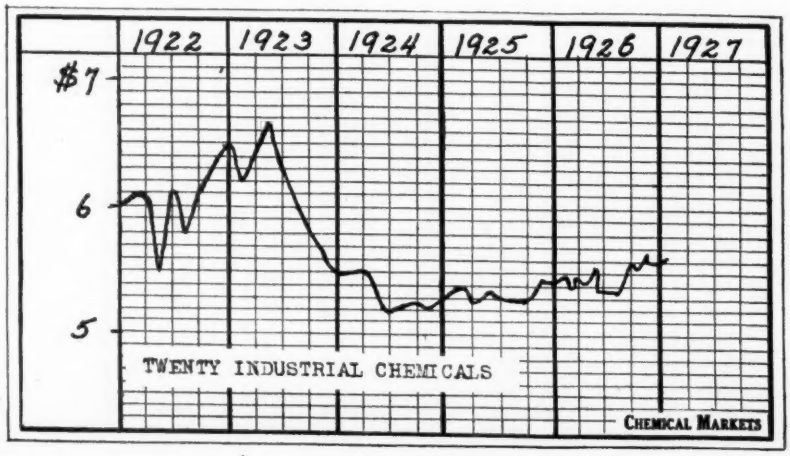
(*Special to* CHEM·CAL MARKETS)

Hamburg, Germany, Feb. 25 (By Mail)—Good demand has set in for caustic potash, caustic soda, bromides, blue vitriol and copperas, but prices are unchanged, with few exceptions. When given in dollars the prices are per 100 kilos, and when in pounds sterling the prices are per 1,000 kilos, f.o.b., Hamburg:

Caustic Potash, $13.50; caustic soda 125-128°, £12 13s; sulfate of alumina 14-15% commercial quality, £4 15s; sulfate of alumina 17-18% commercial quality, £5 15s; hyposulfite of soda coarse cryst., commercial, £6 13s; barium carbonate, $3.50; barium chloride, $3.85; epsom salts commercial in bags, £1 17s; ammonium bromide, $82; potassium bromide, $70; sodium bromide, $73; glauber salts, small cryst., $1.06; chlorate of potash powdered, $11.50; permanganate of potash, small cryst., £37; potash calcined, $11.50 (96-98%); sal ammoniac white granular, $8.40; sodium sulfide 30-32% techn. cryst., £5 10s; sodium sulfide 60-62% fused, £8 10s; oxalic acid, £23 9s; aniline oil, £62; aniline salt, £63.

General selling prices for barium chloride have been raised by the convention, so that goods, spot Hamburg, cannot be had under $3.85 per 100 kilos, f.o.b., Hamburg.

John P. Diedolf, former New York representative of Miner-Edgar Co., has joined the sales staff of Kentucky Alcohol Corp. Mr. Diedolf will call on the New York trade for business on completely denatured and specially denatured alcohol.



Ethylene Dichloride in the rubber industry

VOLATILE solvents are used in the rubber industry for the manufacture of cements and for the moistening of stock in order to secure adhesion to other stock or to fabrics.

The use of solvents such as gasoline or benzol is attended with great hazard, but in the past the cost of safer solvents has been prohibitive.

Ethylene dichloride is a safe solvent. Its use greatly reduces the hazards incident to the use of solvents in the rubber industry and the cost is surprisingly low.

Write us for details.

CARBIDE AND CARBON CHEMICALS CORPORATION

30 East Forty-second Street, New York, N. Y.

Unit of Union Carbide and Carbon Corporation

[Crudes & Intermediates]

BENZENE WEAKER; INTERMEDIATES ARE DULL

All Factors Now Openly Name 23c Gallon for Benzene, and Are no Longer "Meeting Competition" at That Figure—Lower Figures Done in Some Instances—Toluene Remains Very Strong and Brings Increased Production of Xylene and Solvent Naphtha Which Are Weak

Advanced
No Advances.

Declined
No Declines.

Trend of the Market

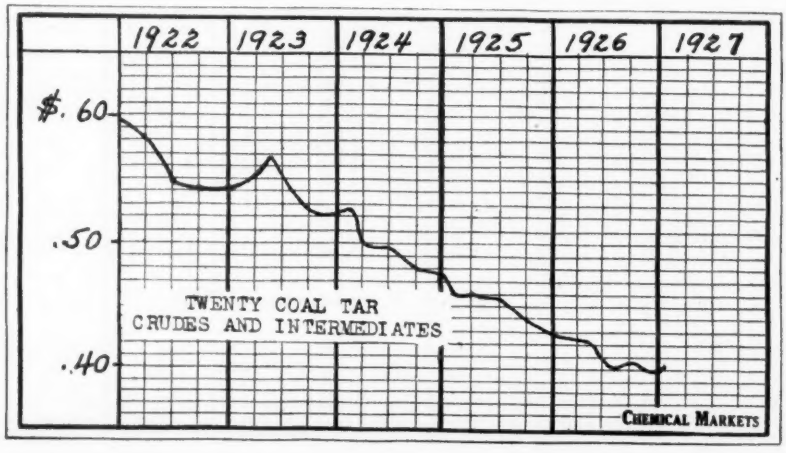
	Today	Two Weeks Ago	Last Month	Last Year	War Peak	Pre-War
Benzene, pure tanks wks....gal	.23	.23	.23	.23	1.10	.25
Naphthalene flake .....lb	.04½	.04½	.05	.05¾	.16	.03
Phenol Spot .....lb	.17	.17	.17	.22	1.50	.08
Toluene tanks wks .....gal	.35	.35	.35	.35		
Aniline Oil le-l	.15	.15	.15	.16	1.40	.10½
Alpha-naphthylamine .....lb	.35	.35	.35	.35	1.28	—
Benzaldehyde .....lb	.70	.70	.70	.70	—	—
Betanaphthol bbls .....lb	.24	.24	.24	.24	1.50	.08
Dimethylaniline e-l	.32	.32	.32	.31	1.30	
Paranitroaniline bbls .....lb	.52	.52	.52	.48	1.58	.18
Average	3.08	3.08	3.08	0.310		

Current Quotations and Comments on Specific Items, Pages 386-396

The weakness that has been prevalent in benzene for the past two months, became more general during the past week. While material has long been generally obtainable at 23c gallon, some factors have held that the "official" quotation has always been 24c gallon, and that they have just been meeting competition. This was with the view that by some unforeseen act, the situation might recover. This hope has now apparently gone, as the "official" quotation in all directions is now 23c gallon, which probably means that in some directions a cent lower can be done. The only hope that factors hold out for a strengthening of the market lies in possible apprehension of buyers over the proximity of a coal strike. The gasoline market has weakened and this has not helped the benzene market, although gasoline is having less effect on benzene prices. One of the main factors in the price of benzene today is the export demand from England.

Toluene is in very heavy demand and producers are recovering greatly increased amounts to meet the demand. However, this is resulting in far too great recovery of solvent naphtha and xylene and the market is having great difficulty in absorbing these products. Toluene prices are very firm but solvent naphtha and xylene are soft in price and it is doubtful that present levels will hold over a long period. Pyridine is dead with denaturers unwilling to take supplies at any price due to their inability to use them after April 1. Cresylic acid is moving in steady volume and prices are firm and generally unchanged. Naphthalene is more active with the season about here, but no strength is apparent in prices.

Intermediates are dull. This is not due to the fact that the volume moving has decreased to any appreciable extent, but rather to the fact that consumers are mostly under contract and spot buyers cannot be forced to take on any more than their immediate needs. The situation remains spotty with one week fairly active and the following week dead without apparent reason. Prices on the whole are unchanged and makers are not competing very sharply as they realize there is very small spot business to be had and to quote a lower price would only upset contract conditions and start a price war.



NEW AMERICAN DYE

E. I. du Pont de Nemours & Co., announce production of Ponsol Red AFF Double Paste, which is being manufactured for the first time in the United States. The industry considers this a valuable addition to the line of vat colors now available in the domestic markets. Ponsol Red AFF Double Paste can be used for full shades of bright bluish reds or for rose and pink shades on either cotton or silk, says du Pont dyestuffs department. It dyes exceedingly level and all of the color can be added to the dye bath before entering the yarn. It does not require the addition of any retarding agents.

Caustic soda necessary to produce the vat is so little that it makes a particularly valuable color for dyeing silk and rayon. The dyeings are fast to boil-off and bleach with hydrogen peroxide and do not stain adjacent undyed fibers. It has excellent general fastness, being particularly of good fastness to washing, alkali, acids, cross-dyeing, ironing, chlorine, perspiration and light, i. e., practically all of the destructive agents to which materials on which it would be used would be subjected. It can be used on practically all types of machines as the shade is not affected by copper, iron or monel metal. On closed machines of the circulating type, it is particularly suitable because of the good penetration and unusually level results obtained. The color can be discharged to a clear white with Sulfoxite CL.

Another dye recently placed on the market is Sulfogene Carbon HXX which is a highly concentrated brand of sulfur black with a pleasing shade and good solubility. It does not float on the water, says the report, wets out very readily and does not dust.

DU PONT

PARA-NITROTOLUENE

and

PARA-TOLUIDINE

Practical manufacturing experience has repeatedly proved that pure ingredients are required for the economical production of fine chemical products.

Para-Nitrotoluene and Para-Toluidine of good quality are needed for the synthesis of Dyes that are true to type and of good tinctorial strength, also for pharmaceuticals which will pass the United States Pharmacopœia requirements.

Buyers of Du Pont Para-Nitrotoluene and Para-Toluidine are assured of deliveries that meet the most exacting quality standards. Ample stocks are always available for prompt shipment.

E. I. du Pont de Nemours & Co., Inc.

Dyestuffs Department, Sales Division

WILMINGTON DELAWARE

Boston New York Chicago
San Francisco

[Oils and Fats]

SENSATIONAL CHINAWOOD ADVANCES FEATURE MARKET

Price on Spot Advances 9c Pound Over Week—Stocks Limited Here—Linseed in Better Position—Crude and Refined Cottonseed Oil Off—Olive Oil Foots Fractionally Lower for Shipment—Denatured Oil Steady—Crude Corn Oil Lower at The Mills

Advanced

Castor Oil, all grades, ½c lb.
Chinawood Oil, spot bbls 8c lb.
Chinawood Oil, Coast tanks, 5c lb.
Grease, brown, ⅛c lb.
Lard Oil, edible, ⅛c lb.
Lard Oil, extra, & No. 2, ¼c lb.
Linseed Oil, spot bbls., 0.2c lb.
Perilla Oil, Coast tanks, ¼c lb.

Declined

Corn Oil, crude, mills, ¼c lb.
Cottonseed Oil, crude, ½c lb.
Cottonseed Oil, refined, ⅝c lb.
Grease, choice white, ¼c lb.
Grease, brown, ⅛c lb.
Red Oil, all grades, ¼c lb.
Stearic Acid, all grades, ½c lb.

Trend of the Market

	Today	Two Weeks Ago	Last Month	Last Year	War Peak	Pre-War
Cod Oil N Y.....gal.	.65	.65	.65	.68	1.20	.26½
Degras American bbl .....lb	.04¼	.04¼	.04¼	.04¼	.23	.03½
Lard No. 1 .....gal	.77	.73	.73	.93	2.90	.92
Menhaden, crude tanks ....gal	.47½	.47½	.47½	.55	1.20	.33
Neatsfoot 20° ct .....gal	1.10¼	1.15¾	1.10¼	1.59¼	8.45	.95
Red Oil distilled .....lb	.09¾	.10	.10	.10¾	.17	.07
Stearic Acid T. P. .....lb	.13¾	.15¼	.15¼	.17½	.38	.12
Coconut Ceylon tanks .....lb	.08½	.08⅝	.08	.10½	.30	.14
Cottonseed. crude tanks ....lb	.07¾	.07¾	.06¼	.10¼	.25	.08
Linseed crude c-l bbls.....gal	.78¾	.80¼	.77¼	.82½	1.85	.57
Olive, denatured.....gal	1.60	1.55	1.38	1.20	4.60	1.05
Peanut refined .....lb	.15½	.15½	.14¼	.15	.30	.08
Soya Bean bbls .....lb	.12	.12	.12	.12¾	.19¼	.07
Average.	4.87	4.87	4.85	5.07	5.92	1.50

Current Quotations and Comments on Specific Items, Page 396-398

Sensational advances in Chinawood oil in all positions are again the feature of the oil market this week. In the case of the spot market prices for oil in barrels have advanced nearly 10c per pound in the short span of a week. Factors having oil are not offering it out except in two or three barrel lots and these parcels command a premium. It is believed that most large buyers are covered with contracts at about half the present market price, but there is no doubt that there is a demand for what there is available. No one will predict when the position will ease off, as the Coast market is also soaring and the position of oil in China is very uncertain.

Linseed oil has recovered somewhat from its easy position and is openly quoted several points higher this week. Last week witnessed a good inquiry from the paint and varnish trade and the crushers look to a healthier market. Castor oil has advanced ½c lb again on higher costs and a continued good demand. The impending fall in olive oil prices has been checked temporarily at least as the markets on both denatured, and edible are unchanged. Foots are also fairly steady though futures are a fraction lower for round lots. Rapeseed oil is holding up well at its recent advance and makers of red oil and stearic acid report a very good business in spite of declining prices.

Following gradual advances for a long period, refined and crude cottonseed oil took a downward turn over the week. It has been predicted in many quarters for some time that the market would not go through the Spring without a slump because of the heavy stocks and carryover which tend toward a sluggish market. In sympathy with the easy movement of crude cotton oil, crude corn oil at the mills is off fractionally and routine. Animal oils and fats are in much the same position as last week with fairly steady markets prevailing.

Oil Trades Association of New York has elected the following officers: H. Mart Smith in charge of the oil department of Grace & Co., president; T. J. Skidmore, vice-president; Joseph C. Smith, secretary; and Philip C. Meon, treasurer. The directorate comprises these officers and Joseph N. Pigot, Albert J. Squier, R. E. E. Hood, J. H. Redding, F. W. McKee, A. A. Hoffman and William L. Koburger.

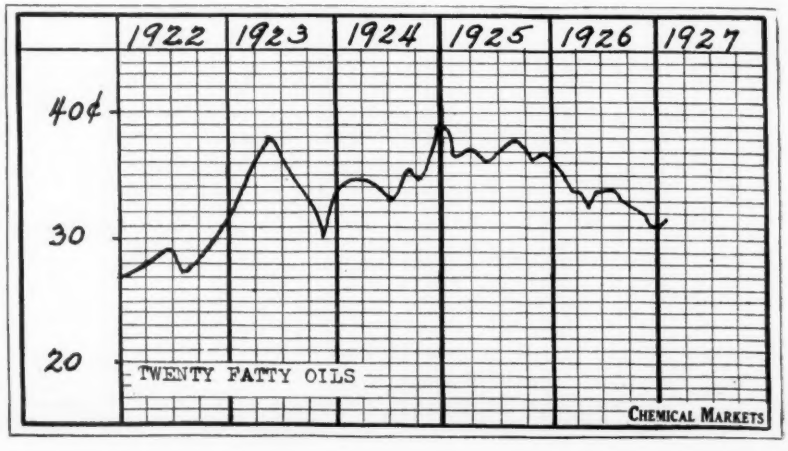
Federal Trade Commission has dismissed its complaint against American Disinfecting Co., Sedalia, Mo., for the reason that the company, on Feb. 4, subscribed to and agreed to abide by the resolution adopted at Trade Practice Conference for Insecticide & Disinfectant Industry held at Indianapolis, Ind., Nov. 10.

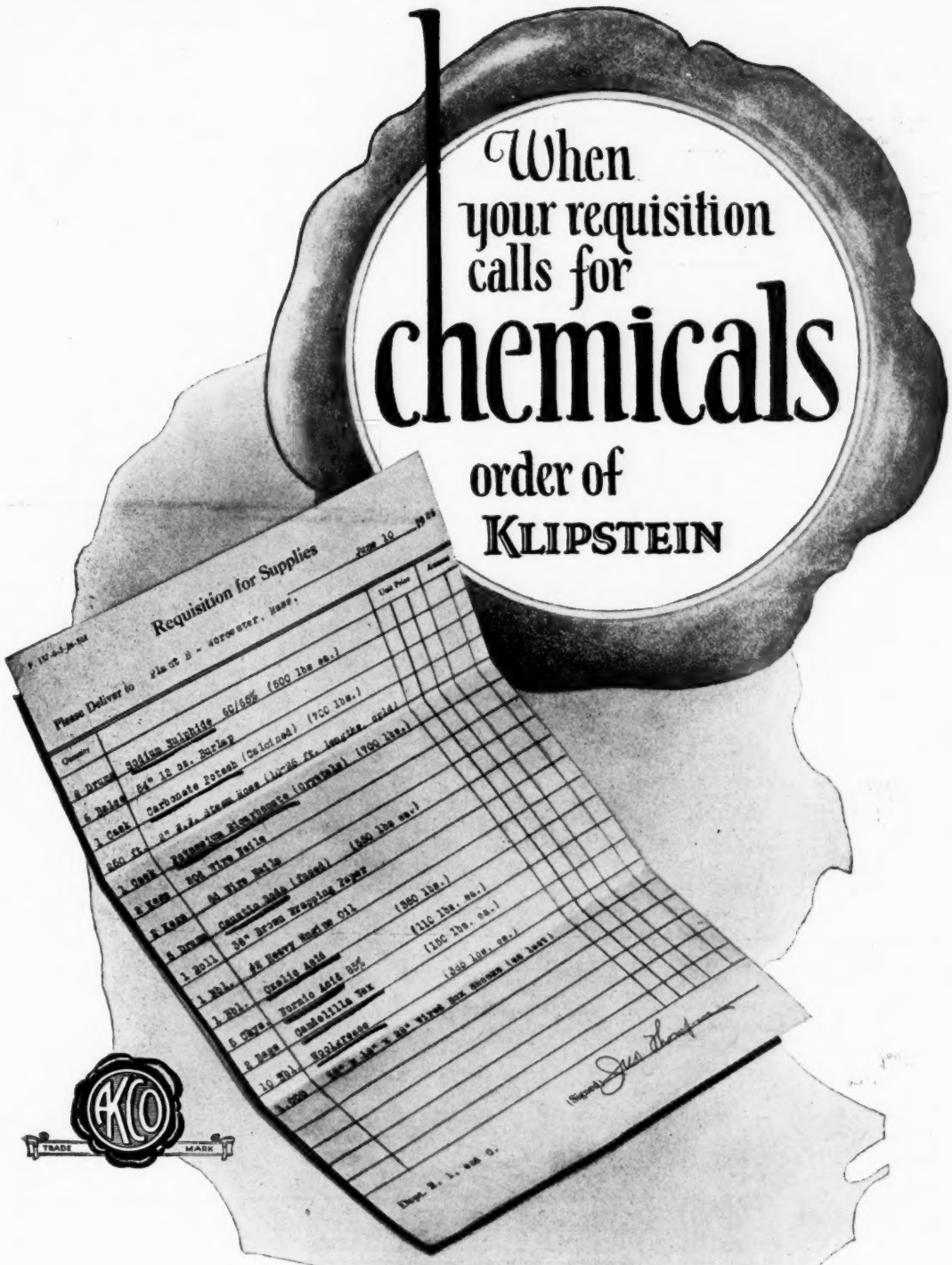
Investigation by Federal Trade Commission of alleged price-control practices of purchasers of cottonseed has been ordered under a resolution approved by the house. The resolution was introduced by Representative John McDuffie of Alabama.

Estimates of flax area received from 24 countries, which in 1925 furnished 95 per cent of the estimated world total flax area are only 0.7 per cent below last year's total for the same countries, according to the Department of Agriculture.

Smith-Alsop Paint & Varnish Co., Terre Haute, increased the volume of business 25 per cent in 1926. Officers of the company and of five subsidiaries have been re-elected. A new plant, costing $250,000, was built during the year.

Review of Oil & Fat Markets of 1926 has been distributed by Faure, Blattman & Co. of London.





A. KLIPSTEIN & CO.

644-52 Greenwich St.
NEW YORK CITY

Branches:

Boston · Philadelphia · Chicago · Providence, R. I. · Charlotte, N. C.

Represented in Canada by A. Klipstein & Co. Ltd., 114 St. Peter St., Montreal

[Agricultural Chemicals]

BLOOD AND TANKAGE HIGHER ON FEEDING DEMAND

Demand From Middle West Cleans New York Market—Prices on Both Advance—South American Also Higher—Sulfate of Ammonia in Better Position—Nitrate of Soda Quiet But Steady—January Shipment Figures—Insecticides Quiet Following Good Contract Season

Advanced
Blood, dried, spot, 10c unit.

Declined
Ammonium Sulfate, spot, 5c 100 lbs.

Trend of the Market

	Today	Two Weeks Ago	Last Month	Last Year	War Peak	Pre-War
Acid Sulfuric 66°.....ton	$15.00	$15.00	$15.00	$14.00	$55.00	$20.00
Amm. Sulfate. 100lbs	2.50	2.55	2.50	2.95	1.75	2.65
Arsenic. 100lbs	3.50	3.50	3.50	3.25	18.00	4.00
Copper Sulfate c-l 100lbs	4.75	4.75	4.75	4.37½	20.00	4.60
Paris Green	.19	.19	.19	.19	.50	.11
Potash Muriate 80% .....ton	36.40	36.40	35.40	34.90	....	....
Potash Sulfate 90% .....ton	47.30	47.30	46.85	45.85	440.00	48.07
Phosphate Acid 16%.....ton	10.00	10.00	10.00	10.00	11.00	3.00
Phosphate Rock 68% .....ton	3.00	3.00	3.00	3.25	2.65	3.00
Sodium Nitrate. 100lbs	2.67	2.64	2.60	2.71	5.00	1.90
Average	12.532	12.534	12.524	11.809	103.50	13.84

Current Quotations and Comments on Specific Items, Pages 386-400

The entire market on fertilizers may be characterized as quiet this week as affects the movement of materials in this section and reports are to the effect that this condition prevails in the South and throughout the Mid-West. Prices in general are well maintained and except for a slight downward movement in the first hand price on sulfate of ammonia there are no declines this week.

Interest continues to center on nitrate of soda, particularly as to the future position of the market. There has been no change in the situation this week and about the average amount of buying is noted by consumers, though not in great volume. Should any demand set in in the Southeast prices would undoubtedly advance sharply as the Jacksonville market is devoid of stocks and other centers in that section have but limited supplies. The season has gotten well along now without signs of any heavy buying to catch up the deficit in sales. On an inquiry in the market for futures at New York a price of $2.25 100 lbs was named for August and October.

The heavy demand from Chicago for blood and tankage has subsided but the markets on both continue firm. Stocks are not large and the production at the moment is not up to the usual volume, so that producers are having no trouble in maintaining and in the case of blood advancing the market.

A reduction of 1c pound on lead arsenate announced two weeks ago has been the feature of the insecticide market for the past month. Competition for business is advanced as the reason for the decline by one maker. This downward movement was rather unexpected as all insecticides are supposedly moving in a manner very satisfactory to sellers and fully up to last year in volume. Other insecticides are moving steadily. Nothing has developed as to the annual speculation of the trend of the calcium arsenate market.

"Tremendous Development in Ramifications of German Nitrate and Dye Interests" is the title of an article in "Manufacturers Record" (Baltimore) Feb. 17.

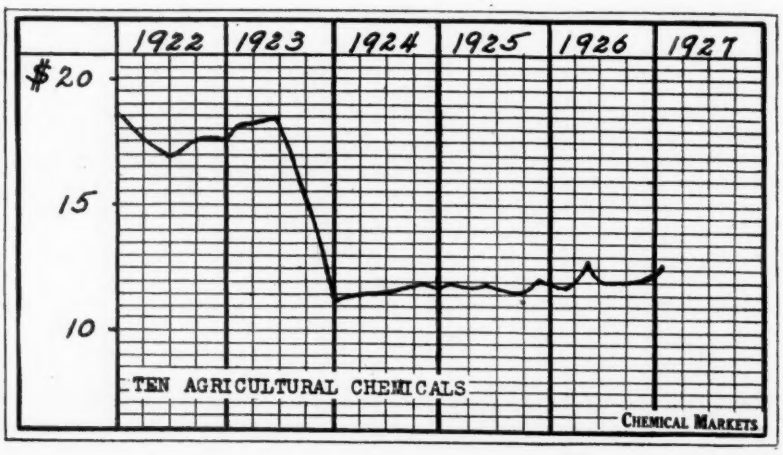
FERTILIZER EXPORTS GAIN

Value of fertilizers and fertilizer materials exported from the United States during 1926 increased 14 per cent over the 1925 trade, to a total of $19,670,000. The increase was brought about by an increase of 40 per cent in the exports of sulfate of ammonia; and an important increase in the exports of ammonium phosphate.

The trade in phosphate rock suffered severe decline, high grade hard rock shipments falling from 158,985 to 103,572 tons, while shipments of land pebble dropped from 697,891 to 634,362 tons. In the hard rock trade shipments to Germany were only 27,025 tons compared with over 90,000 tons in the previous year. New markets were developed for over 25,000 tons of hard rock in Australia and New Zealand. The same markets also absorbed over 43,000 tons of the land pebble variety which, with about 8,000 tons for Java, helped to offset the decreased shipments of land pebble to European destinations. The 1926 exports of superphosphates and prepared fertilizer mixtures declined slightly in quantity.

Buttons from dried blood plastic, which consists of blood exclusively and does not contain any other ingredient, are manufactured by a firm in Denmark, writes Trade Commission Daugherty. This blood plastic has been employed in Denmark since 1916, principally in the manufacture of buttons, and in a small way articles for the electrical industry. There is a limited sale for American dried blood.

Schuyler L. Parsons, member of firm of Parsons & Petit, sails for Europe Friday, March 11.



Industrial Chemicals

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The Following High Grade Chemicals to the Trade

Ammonia, Anhydrous
Ammonia, Aqua
Ammonium Chloride
Barium Carbonate
Barium Chloride
Case Hardening Compounds
Copper Carbonate
Copper Sulphate
Cresylic Acid
Cyanide, Aero Brand
Cyanide, Copper
Cyanide, Potassium
Cyanide, Silver
Cyanide, Sodium
Cyanide, Zinc
Dicyandiamid
Diortho-Tolylguanidine
Diphenylguanidine
Formic Acid
Hydrocyanic Acid, Liquid
Lead Acetate
Ortho Toluidine
Potassium Carbonate
Potassium Prussiate, Red
Potassium Prussiate, Yellow
Sodium Prussiate, Yellow
Sodium Sulphide
Sulphocyanides
Sulphuric Acid
Thiocarbanilide
Thiourea
Urea
Xanthates, Sodium & Potassium
Zinc Dust, "Asarco" Brand
Zinc Sheets
Zinc Sulphate, "Asarco" Brand

American Cyanamid Co.

535 Fifth Avenue
NEW YORK

AMERICAN CYANAMID CO. AERO BRAND PRODUCTS

[Industrial Raw Materials]

ALL GRADES OF ROSIN LOWER THIS WEEK

Routine Interest and Approach of New Offerings Cause Sharp Break in All Grades—Turpentine Off a Bit—Vermilion Higher—Tanning Materials Continue Strong—Japan Wax Reaches Level of Last Spring—Carnauba Wax Steady—Varnish Gums Quiet and Steady

Advanced

Casein, imp. standard, spot, 1c lb. Egg Yolk, spot, 1c lb. Vermilion, imp., spot, 10c lb.

Declined

Albumen, egg, spot, 2c lb.
Antimony, metal, spot, ½c lb.
Rosin, B, 75c 280 lbs.
Rosin, D, $1.15 280 lbs.
Rosin, E, 85c 280 lbs.
Rosin, F, $1.00 280 lbs.
Rosin, G, 90c 280 lbs.
Rosin, H, K, WW, $1.25 280 lbs.
Rosin, I, M $1.50 280 lbs.
Rosin, N, $2.25 280 lbs.
Rosin, WG, $2.75 280 lbs.
Turpentine, spot, 3½c gal.

Current Quotations and Comments on Specific Items, Pages 238-240

A slump in the price of all grades of rosin both on spot and at the primary markets was of outstanding interest this week. This can pro- ably be attributed to the buyers anticipating new crop arrivals at a early date and holding off from buying now in the opinion that sellers will be forced to reduce prices to move stocks. They have been aided by the weather, in that production is under way earlier this year because of the mild weather prevailing during February. At the moment the market is holding fairly steady following the decline. Turpentine is again off this week following a partial recovery from the low price of the season two weeks ago. The market is none too firm and consumers are not anxious to commit themselves for quantities while such conditions exist.

All other items under this group are in about the same position as last reported. Japan wax is a little easier on spot and more in line with prices ruling at this time last year. Carnauba wax is holding stubbornly at the level it has attained. Tanning materials are still in short supply in all quarters and importers are having no trouble in making sales at the quoted level. Since the last monthly review, accelerator makers have made sharp cuts in the openly quoted prices of diphenylguanidine and diorthotolylguanidine and they are now in conformity with inside prices which have prevailed for some time. Imported casein is higher on advanced shipping costs and firm at the new level, although the inquiry is light at the moment.

Egg albumen is a bit easier on spot owing to a falling off in demand. Egg yolk continues in very limited supply here with sellers offering only in single case lots. An advance in imported vermilion, reflecting the higher price of mercury is the only change amongst dry colors. Red lead and litharge are quiet at the moment, but makers anticipate the annual seasonal demand at an early date.

(*Special to* CHEMICAL MARKETS)

Savannah, Ga., March 7—Turpentine closed firm last week unchanged at 65¼c@65½c gal. which shows a drop in the market of about 4c gal. for the week. There is a good undertone to the market and we expect to see a continued good interest during the coming week that will probably advance the price of turpentine in a material way. In the event that any large offerings are placed on the market the price will decline again. A bit of the new crop of rosin and turpentine is now coming to market but new crop is not expected to be a factor until well into April. The mild weather during February will increase the receipts a little during the next month. It is expected that the consumers will hold off as long as possible in the hope that there will be larger offerings at other places. Receipts of turpentine last week were 557 bbls.; sales reported, 157 bbls.; shipments, 2337 bbls.; and Savannah stocks, 6523 bbls.

Rosin closed firm on Saturday although prices for the week showed a big slump. The beginning of this week is expected to show a firm market and sufficient business is expected to be done to check further declines. Last week's drop came a bit earlier than expected. Most buyers are still holding off and are apparently indifferent. Receipts last week were 2312 bbls.; sales reported, 1538 bbls.; shipments, 2241 bbls. and stocks Saturday, 44,924 bbls. Current quotations are: B, $8.50; D, $8.60; E, 9.00; F, $9.25; G, $9.50; H, $9.75; I, $10.00; K, $11.00; M, $11.25; N, $11.75; WG, $12.00 and WW, $15.00.

Jacksonville, Fla. — Turpentine closed firm at 65-65¾c gal. Rosins were quiet and unchanged at previous quotations with no bids submitted. Offerings of 1446 bbls. unsold. Turpentine stocks are, 22,014 bbls.; rosin stock, 64,544 bbls.

VALUABLE CHEMICAL CARGO LOST AT SEA

Bound for New York from various Mediterranean ports, the S.S. "Cabo Hatteras" of the Garcia & Diaz Line, with a miscellaneous cargo of valuable chemical items aboard, caught fire, foundered and was sunk by the revenue cutter "Seminole" off the Atlantic coast on March 7. The entire cargo is lost.

The following parcels to various consignees in this country were aboard: 684 flasks of quicksilver; 40 bbls. iron oxide; 188 bags of tartar; 13 drums essence; 135 bales of roots; 55 cases vanilla beans; 6 bales flowers; 36 bags gum; 207 bales medicinal leaves; 500 bags osseine; 200 bbls. ochre; 339 bags medicinal seed; 4 cks. cinnabar; 100 bbls. sienna earth; 650 bags talc; 6 cases vegetable extract; 375 drums olive oil; 6938 cases olive oil; 700 bbls. olive oil.

Leading German chemical firms making sodium sulfide have entrusted the sale of all sodium sulfide manufactured by them to a special organization created by them for this purpose, and of which they are the sole partners. The title and address of this sales organization are: Schwefelnatrium G.m.b.H., 31 Gutlentstrasse, Frankfurt a.M. They are I. G. Farbenindustrie A.-G., Rhenania-Kunheim Verein Chemischer Fabriken A.-G. Berlin, Concordia chemische Fabrik auf Aktien, Leopoldshall-Stassfurt, Th. Goldschmidt A.-G., Mannheim-Rheinau, and B. Roos & Co., Berlm.

William Knust has been appointed advertising manager of National Lead Co., New York, maker of Dutch Boy white lead. He succeeds O. C. Harn, who becomes managing director of Audit Bureau of Circulations and to whom Mr. Knust has been assistant. Mr. Knust has been associated with the company for seventeen years.

Universal Shellac Stick Co., has removed its office and warehouse from 8 Beach St., New York, to larger quarters in the Sperry Bldg., Flatbush Ave., Brooklyn. Wm. H. Dey & Co., 11 Water St., New York, is the agent for the Universal Co. in New Jersey and New York state outside of New York City.

Superfos Co., New York, has been appointed American selling agent for Holsverkohlungs Industrie A. G., Schweinfurt, Germany, manufacturers of chlorophyll.

DISCRIMINATING BUYERS

of advertising are increasingly insistent for proof of circulation. They know from broad experience that the value of a publication rests equally upon reader interest and the *number of readers.*

Advertising agencies of recognized standing, who handle chemical advertising, buy full page space in CHEMICAL MARKETS. The record of this jury of experienced advertising buyers is listed below:

N. W. Ayer & Son	Philadelphia	American Telephone & Telegraph Carbide & Carbon Chem Corp.
Bayless-Kerr Co.	Cleveland	Grasselli Chemical Co.
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Hazard Advertising Corp.	New York	Amer. Solvents & Chem. Corp. Electro Bleaching Gas Co. General Dyestuff Corp. Roessler & Hasslacher Chem. Co.
Industries Publicity Corp.	New York	A. Klipstein & Co.
Lord & Thomas and Logan	Chicago New York	Commercial Solvents Corp. Radio Corp. of America
Marschalk & Pratt, Inc.	New York	Mathieson Alkali Works
Morse International Agency	New York	Solvay Process Co.
Fred M. Randall Co.	Detroit	Dow Chemical Co.
Frank Seaman, Inc.	New York	E. I. Du Pont de Nemours & Co.
J. Walter Thompson Co.	New York	U. S. Industrial Alcohol Co.
Wightman-Hicks, Inc.	New York	General Chemical Co.

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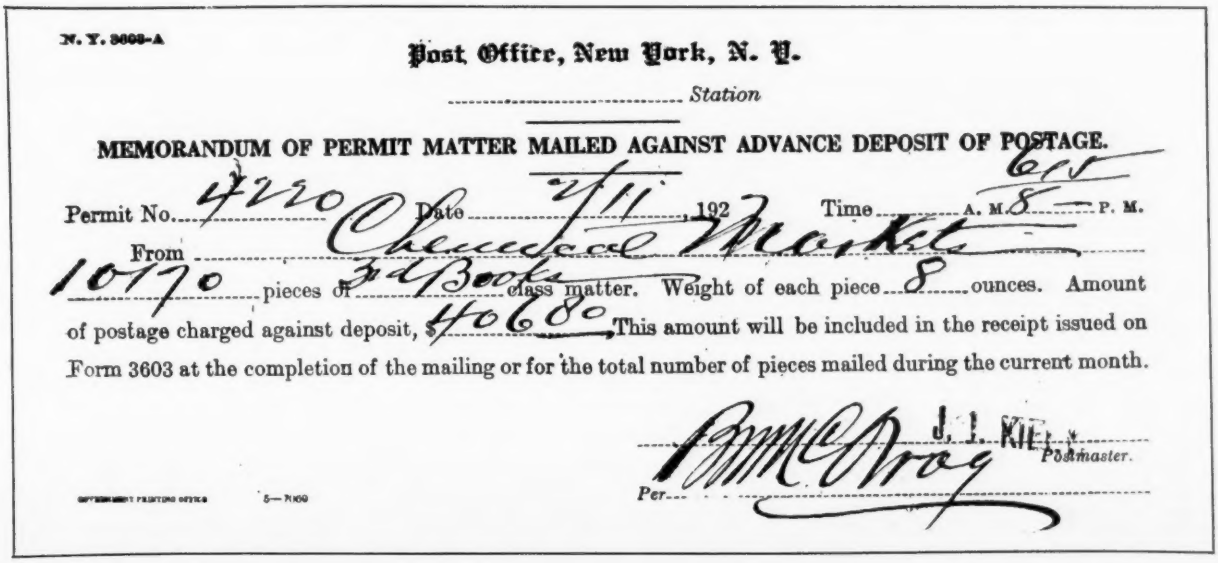

N. Y. 3603-A

Post Office, New York, N. Y.

Station

MEMORANDUM OF PERMIT MATTER MAILED AGAINST ADVANCE DEPOSIT OF POSTAGE.

Permit No. 4220 Date 4/11, 192 Time 6 A. M. 8 P. M.

From Chemical Markets

10170 pieces of 3d Books class matter. Weight of each piece 8 ounces. Amount of postage charged against deposit, $ 40.68 This amount will be included in the receipt issued on Form 3603 at the completion of the mailing or for the total number of pieces mailed during the current month.

J. J. Kiely Postmaster.

Per

GOVERNMENT PRINTING OFFICE 5—7169

Prices Current

Heavy Chemicals, Coal-tar Products, Dye-and-tanstuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.

Chemical prices quoted herein are those of American manufacturers for goods, spot New York, f. o. b., or ex-store, for immediate shipment, unless otherwise specified. Industrial chemical products sold principally on a basis of f. o. b. works are specified as such. Quotations on imported chemicals are so designated. Resale stocks sufficient to be a factor in the market, are quoted in addition to makers' prices and are indicated as "second hands."

Oils and fats are quoted spot New York, or ex-dock. Quotations on products sold f. o. b. mills, or spot Pacific Coast are so designated.

Industrial raw materials are quoted spot New York, f. o. b., or ex-dock. Materials sold f. o. b. works or delivered at various sections of the country are so designated.

The range of prices given is not "bid and asked," but indicates quotations from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used in the New York market.

Chemicals

Acetaldehyde drs, or cyl. c-l wks	lb	...	.22
lc-l wks	lb	.24	.26
ACETANILID, tech 150 lb bbls	lb	.20	.21
100 lb kegs	lb	.22	.23
Acetic, Anhydride 85% 100 lb cbys	lb	.27	.30
92-95% 100 lb cbys	lb	.29	.35
Acetic Ether, see Ethyl Acetate			
Acetine, 50gal drums	lb	.37	.40
Acetone, CP, 700 lb drs c-l wks	lb	...	.12
Tank cars, wks	lb	...	.12
700 lb drs., lc-l wks	lb	.13	.13½
350 lb drs lc-l wks	lb	...	.14
Acetone Oil light drs N. Y.	gal	1.65	1.75
Heavy, drs N. Y.	gal	1.65	1.75
Acetyl Chloride, 100 lb cbys	lb	.42	.45
Acetylentetrabromide	lb	...	1.50
ACID, Acetic, 28% 400 lb bbls c-l wks	100 lb	...	3.33
56% c-l wks	100 lb	...	6.24
70% bbls c-l wks	100 lb	...	7.82
80% com'l bbls c-l wks	100 lb	...	8.77
80% pure bbls c-l wks	100 lb	...	9.75
Glacial bbls c-l wks	100 lb	...	11.92
Glacial, USP, cby wks	100 lb	...	12.65
Lc-l 25c 100 lbs differential			
Anthranilic, tech., drs	lb	...	.80
99-100% 100 lb drs	lb	.98	1.00
Benzoic, tech., 100 lb bbls	lb	.57	.60
Boric crys., powd., 250 lb bbls	lb	.08½	.11
Kegs 100 lb	lb	.09½	.12
Carbolic, crys., see Phenol			
Crude 35% 50gal bbls	gal	.31	.33
10% 50gal bbls	gal	.25	.28
Carbonic, see Carbon Dioxide			
Chloracetic Mono 100 lb bbls wks	lb	...	.25
Di, 150 lb cbys wks	lb	...	1.00
Chlorosulfonic 1500 lb drs wks	lb	.15	.16
Chromic 98% 400 lb drums	lb	.37	.40
Chromotropic, 300 lb bbls	lb	1.00	1.06
Citric, USP, cryst 230 lb bbls	lb	.43	.43½
Powd, USP, 200 lb bbls	lb	.44	.44½
Imported, crys, 112 lb kegs	lb	.43	.43½
Cleve's 250 lb bbls	lb	.95	.97
Cresylic, 95% dark drs NY	gal	.57	.60
97-99% pale NY	gal	.60	.65
Formic, 85% tech., 140 cbys	lb	.10	.10½
90% 90 lb cbys incl	lb	.10½	.11
Gamma, 225 lb bbls wks	lb	1.00	1.06
H 225 lb bbls wks	lb	.57	.63
Hydrobromic, 48% com'l 155 lb cbys wks	lb	.45	.48
Hydrochloric, see Acid Muriatic			
Hydrocyanic, wks cyl	lb	.80	.90
HYDROFLUORIC, 30% 400 lb bbls wks	lb	...	.06
30% 100 lb cbys wks	lb	...	.08
48% single 100 lb cbys wks	lb	...	.10
52% 100 lb cby., wks	lb	...	.12
52% 100 lb cbys wks	lb	...	.11
60% 100 lb cby wks	lb	...	.14
60% 300 lb dr wks	lb	...	.13
White Acid, 100 lb cby wks	lb	.25	.26
Hydrofluosilicic, 35% 450 lb bbls wks	lb	...	.11
J kegs wks	lb	...	3.00
LACTIC, 22% dark 500 lb bbls	lb	.05½	.06
22% light bbls	lb	.06½	.07
44% dark bbls	lb	.11	.12
44% light bbls	lb	.12	.13½
Laurent's 250 lb bbls	lb	.83	.84
Tank Cars	gal	...	.33½

Acetone—Producer continues to move all production into domestic consumption and export at firm unchanged prices.

Acid Acetic—Schedule prices remain in force in all directions and the market is quite firm under a steadily increasing demand.

Acid Muriatic—Market steady and demand normal, prices in all directions are firm and unchanged.

Acid Nitric—All grades are moving in routine manner with all factors quoting firm unchanged prices.

Acid Oxalic—Market remains tight with domestic makers firm in their prices which may advance any time.

Acid Sulfuric—Makers report a very strong market and a heavy demand. The tight position of sulfur is responsible.

Alcohol Butyl—Maker has advanced price ½c lb owing to higher corn market and now quotes on contract 19c lb for tanks, 19½c lb for drum carlots, and 20c lb for drum lots. Demand is very heavy.

Alcohol Denatured—Market is weak. Factors state that no price exists as business is being done on the basis of what the competitor is quoting. Tanks have moved openly as low as 25c gal., and large lots are reported to move at still lower prices into the hands of factors in the anti-freeze market who expect to hold the material till next Winter. There is no recovery in sight for the Summer.

Ammonia Anhydrous—Market remains at unchanged low prices with factors anticipating no immediate change but forecasting strength and possibly higher from June onward when the Summer demand sets in.

Ammonia Aqua—Moving in good volume but greatly over-produced and prices remain low and very competitive.

ACID, HYDROFLUORIC (Cont'd)			
ACID, Metanilic, 250 lb bbls	lb	.60	.65
Mixed, Sulfuric-nitric Drums, wks	N Unit	.07¾	.08
Drums, wks	S Unit	.01	.01⅛
Tank cars, wks	N Unit	.06	.06½
Tank cars wks	S Unit	.008	.01
Monosulfonic F Delta 50 lb tins	lb	...	1.65
MURIATIC, 20° cbys wks 100 lb		1.70	1.80
cbys c-l wks	100 lb	...	1.45
Tank cars wks	100 lb	...	1.05
18° 120 lb cbys c-l wks	100 lb	...	1.35
Tank cars, wks	net ton	...	.95
Naphthionic tech, 250 lb bbls	lb	.55	.59
N. & W. 250 lb bbls	lb	.95	.99
NITRIC 36° 135 lb Cbys c-l wks	100 lb	...	5.00
40° cbys c-l wks	100 lb	...	6.00
42° cbys c-l wks	100 lb	...	6.50
Lc-l 25c 100 lbs, differential			
CP, cbys single wks	100 lb	.12	.13
Oxalic, 300 lb bbls wks N. Y.	lb	.11	.11¼
Imp., 560 lb casks	lb	.11½	.12
Phosphoric, 50% 150 lb cbys	lb	.07	.07½
Syrupy USP, 70 lb drums	lb	...	.17
Demis	lb	...	.18
Imported	lb	.16	.16½
Phthalic, See Phthalic Anhydride			
Picramic, 300 lb bbls	lb	...	.50
Picric, 450 lb bbls c-l	lb	.30	.33
Pyrogallic tech 200 lb bbls	lb	...	.86
S kegs	lb	...	2.50
Salicylic tech., 125 lb bbls	lb	.27	.32
Sulfanilic, 250 lb bbls	lb	.15	.16
SULFURIC, 66° 180 lb cbys lc-l wks	100 lb	1.60	1.95
Cbys c-l wks	100 lb	...	1.35
1,500 lb drums wks	100 lb	...	1.20
Drums c-l wks	100 lb	...	1.00
Tank cars, wks	net ton	...	15.00
60° 1,500 lb drums wks	100 lb	...	1.10
Drums c-l wks	100 lb	...	.87½
Tank cars, wks	net ton	...	10.50
C.P. 175 lb cbys	100 lb	.07	.08
Oleum 20 pc 1500 lb drums lc-l wks	100 lb	...	1.50
Drums c-l wks	100 lb	...	1.35
Tank cars, wks	net ton	18.00	19.00
Oleum 40% drs lc-l wks	net ton	...	42.00
Oleum 60% drs wks	net ton	62.00	72.00
Tannic, tech., 300 lb bbls	lb	.30	.40
Tartaric, USP, cryst powd 300 lb bbls	lb	...	.29½
Imp., USP., 240 lb bbls	lb	.27½	.28
Tobias, 250 lb bbls	lb	...	.85
Tungstic, 100 lb kegs	lb	...	1.00
ALCOHOL, amyl See Fusel Oil			
Butyl Normal 50gal drs wks c-l	lb	.19½	.20½
Drums lc-l wks	lb	.20	.21
Tanks cars wks		.19	.20
Butyl Tertiary 50gal drums	gal	.50	.54
Diacetone, 50gal drs del.	gal	1.70	1.90
Ethyl, USP 190pf 50gal tbls	gal	...	3.70
Anhydrous, drums	gal	.50	.55
Denatured 50gal bbl incl	gal	...	.38
Carlots	gal	...	.36
50gal drums extra	gal	...	.29
Tank Cars	gal	...	.27

Acetaldehyde
Acid Laurent's

Acid Metanilic
Alcohol Ethyl Denatured

1857 - Pioneer Manufacturers for Seventy Years - 1927

For Paint Plating & Agriculture

Copper Carbonate

Pure Precipitated in 400 lb. barrels

Makes an excellent light green paint, with good body and covering power.
For Platers, yields the maximum plate per pound and *more* plate per hour.
In Flag Smut of Wheat and Loose Smut of Oats increases stand and saves losses.

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192 Worth Street, New York

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Caustic Soda

SOLID—FLAKE
GROUND—LIQUID

Soda Ash

LIGHT
DENSE

Columbia Chemical Division
Pittsburgh Plate Glass Co., Barberton, Ohio

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Beta Methyl Anthraquinone
Aluminum Chloride (Anhydrous)
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ALUMINUM CHLORIDE

(Sublimed Anhydrous)

Highest Purity
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Alcohol, Ethyl, Denatured
Antimony, Needle

Chemicals

Antimony Chloride
Calcium Nitrate

ALCOHOL, Ethyl, Denatured			
No. 1 Special denat. 190pf			
50gal bbl incl	gal	...	.46½
Carlots	gal	...	.44½
50gal drums extra	gal	...	.37½
Tank cars	gal	...	.35½
No. 3 Complete denat. 188pf			
50gal bbl incl	gal	...	.38
Carlots	gal	...	.36
50gal drums extra	gal	...	.29
Tank cars	gal	...	.27
Isopropyl, refined, 90-91% 50 gal drs	gal	1.00	1.25
Propyl anl., 50gal drs	lb	...	1.00
Ref'd. 98-99% drs	gal	1.25	1.50
Aldehyde Ammonia, 100gal drums	lb	.80	.82
Alpha-Naphthol crude 300 lb bbls	lb	...	.65
Refined	lb	.85	.90
Alpha-Naphthylamine, 350 lb bbls	lb	.35	.37
ALUM, Ammonia, lump 400 lb bbls			
wks lc-l	100 lb	3.15	3.50
Ground 400 lb bbls wks	100 lb	3.25	3.65
Powd. 380 lb bbls wks	100 lb	3.65	3.90
Chrome, 500 lb cks., wks	lb	5.25	5.50
Potash, lump, 400 lb wks.	100 lb	3.50	3.75
Bbls c-l wks	100 lb	3.35	3.40
Imported lump	100 lb	...	3.25
Ground 400 lb bbls wks	100 lb	3.50	3.85
Imp., 350 casks	100 lb	2.65	3.00
Powd., 380lbs bbls wks	100 lb	3.50	4.00
Chrome, 500 lb casks wks	100 lb	5.25	5.50
Soda Grd., 400 lb bbls wks	100 lb	...	3.75
Bbls., c-l wks	100 lb	...	3.50
Aluminum metal, c-l NY	100 lb	...	26.00
Chloride, anhyd 275 lb drs	lb	.35	.40
Crystals, 375 lb bbls	lb	...	.06½
30% sol., 120 lb cbys	lb	...	.08
Hydrate 96% light 90 lb bbls	lb	.17	.18
Hvy., 62-64% 220 bgs	lb	.06	.06½
400 lb bbls wks	lb	.06½	.07
Stearate, 100 lb bbls	lb	.23	.24
AMIDOL (See Diaminophenol)			
Aminoazobenzene, 110 lb kegs	lb	...	1.15
AMMONIA, anhyd. 100 lb cyl	lb	.11	.12½
Water, 26° 800 lb drs del	lb	...	.03
Drs., c-l delivered	lb	...	.02¾
Tanks	lb	.02¼	.02½
CP cbys	lb	...	.12
Acetate, 100 lb kegs	lb	...	.34
Bifluoride, 300 lb bbls	lb	.21	.22
100 lb kegs	lb	.23	.23
Bromide, 450 lb bbls 50 lb bxs	lb	...	.55
Imported, 112 lb boxes	lb	.50	.52
Carb. tech., 500 lb cases	lb	.03¾	.09
Powd., tech., 550 lb cks	lb	.07¼	.07¾
USP, lump 100 lb kegs	lb	.11	.11½
Powd. 100 lb kegs	lb	.13	.13½
Chloride White 250 lb bbls wks	lb	.06½	.06¾
250 lb bbls c-l wks	lb	...	.06
Imp. white 600 lb cks	lb	...	.05½
C.P. USP, gran bbls	lb	.13	.13½
Gray, 250 lb bbls wks	lb	.07	.07½
Bbls., c-l wks	lb	...	.07
Imp. gray 550 lb cks	lb	.06	.06¼
Lump, 500 lb casks spot	lb	.11	.11¼
Lactate, 500 lb bbls	lb	.15	.16
Refined Crystals bbls	lb	...	.20
Oxalate, pure 100 lb kegs	lb	.35	.37
Persulfate, 112 kegs	lb	.27½	.30
Phosphate, dibasic 200 lb bbls	lb	...	.38
Tech., powdered 325 lb bbls	lb	...	.18
Mono, 325 lb bbls	lb	.12	.12½
Sulfate, bulk c-l	100 lb	...	2.55
Southern points	100 lb	...	2.55
Imp., 200 dbl bgs fas	100 lb	...	2.50
Sulfocyanide tech., 100 lb kgs	lb	.40	.45
Amyl-Acetate, tech., 50gal drs	gal	...	2.25
Refined 50gal drums	gal	2.40	2.50
Alcohol, see Fusel Oil			
ANILINE OIL, 960 lb drums	lb	.15	.16
Salt 200 lb bbls	lb	...	.34
Anthracene, 80-85% 600 lb casks wks	lb	.60	.65
Anthraquinone, sub 125 lb bbls	lb	.90	1.00
Antimony metal slabs tons lots	lb	.13	.13¼
Needle powd 100 lb cs	lb	.15½	.16

Ammonium Chloride—Demand is good but imported supplies are heavy and prices are low in an easy market.

Ammonium Sulfate—The market in this territory is a bit easier this week and first hand parcels were sold at $2.50 per 100 pounds in a routine way. Inquiry in other sections is fair.

Aniline Oil—Makers report normal withdrawals against contracts, and very slight spot business passing at firm unchanged prices.

Antimony—Owing to lower prices from China, the spot market is off this week to 12¾c lb for the metal. Consuming interest here is routine.

Arsenic—Market is firm in all directions with domestic refiners as the only source of supply and quoting carlots at 3¾c lb. Imported material for shipment is quoted above these figures. Demand at the moment is slight.

Barium Carbonate—Market is very quiet and demand is decidedly routine in character.

Barium Chloride—Imported material is offered in sufficient quantities at the seaboard to hold the market for domestic material at a price of $61.00@$63.00 ton as to quantity.

Barium Hydrate—In slight demand with prices firm and unchanged.

Benzene—Market is weak and unsettled. Despite the fact that the market for the past two months has been 23c gallon in tanks, some factors claimed to be maintaining a price of 24c gallon. Now these factors have admitted that this can no longer be maintained and openly quote the market price of 23c gallon. The market is weak at 23c gallon and goods are passing in some instances at 22c and fractionally lower. The only hope that factors hold out for a strengthening of the market lies in the likelihood of a coal strike.

Benzidine Base—Makers report a normal demand with all makers naming firm unchanged prices.

Beta-Naphthol—Steady as to price and demand.

Bleach—Market is quiet but firm at unchanged prices.

Calcium Acetate—Heavy demand for acetic acid continues to maintain this market in a firm position.

Carbon Tetrachloride—A very heavy consuming demand that has

ANTIMONY CHLORIDE, anhyd 1000 lb			
drs	lb	.16	.17
50 lb crocks	lb	.45	.48
Sol'n 130 lb carboys 48°	lb	...	.17
Oxide, 500 lb bbls	lb	.16¼	.17
Sulfuric golden, 250 lb bbls	lb	.15	.16
Crimson 250 lb bbls	lb	.25	.27
Vermilion, 250 lb bbls	lb	...	.37½
Tartrolactate, 500 lb bbls	lb	...	.45
Arsenic metal 220 lb kegs	lb	.45	.50
Red, 224 kegs cases	lb	.10½	.11
White, 112 lb cases NY	lb	...	.03¾
BARIUM BINOXIDE, see Barium dioxide			
Carbonate 300 lb bbls wks	ton	50.00	52.00
200 lb bgs wks	ton	47.50	50.00
Imports, casks NY	ton	47.00	48.00
Chlorate, 112 lb kegs NY	lb	.12	.12¼
Chloride, 800 lb bbls wks	ton	65.00	67.00
200 lb bags wks	ton	61.00	63.00
Imports spot	ton	61.00	63.00
Dioxide, 88% 690 lb drs	lb	.13	.13½
Import, 86-88% 400 lb drs	lb	.13	.13½
Hydrate, 500 lb bbls	lb	.04¾	.04¾
Nitrate, 700 lb csks	lb	.07½	.08
Sulfocyanide 600 lb bbls	lb	.27	.28
Barytes, floated 350 lb bbls wks	ton	23.00	24.00
Imported	ton	29.00	33.00
Benzaldehyde tech. 945 lb drs wks	lb	.65	.70
BENZENE			
Comm. 90% 8,000gal tks wks	gal	...	.23
Commercially pure tks wks	gal	...	.23
Drum lots 5c gal higher			
Benzidine Base, dry 250 lb bbls	lb	.70	.74
Benzol, see Benzene			
Benzoyl Chloride 500 lb drs	lb	...	1.00
Benzyl Acetate 100 lb cbys	lb	1.30	1.40
Benzoate, bulk	lb	1.15	1.35
Chloride 95% tech 925 lb drs	lb	...	.35
100 lb cbys	lb	.25	.30
BETA-NAPHTHOL 250 lb bbls wks	lb	...	.24
c-l	lb	...	.22
Sublimed	lb	.55	.60
Beta-Naphthylamine tech 200 lb bbls	lb	.63	.67
Sublimed, 200 lb bbls	lb	...	1.35
Blanc Fixe, dry 400 lb bbls wks	ton	80.00	90.00
Imported, bbls	ton	70.00	72.00
Paste, 650 lb bbls c-l	ton	45.00	55.00
BLEACHING POWDER, 700 lb drs			
c-l wks contract	100 lb	...	2.00
c-l spot wks	100 lb	...	2.10
300 lb drs c-l wks contract	100 lb	...	2.25
c-l spot wks	100 lb	...	2.35
lc-l 15c 100lbs differential			
Blues, bronze Chinese, Milori			
Prussian Soluble	lb	.30	.33
Blue Vitriol, see Copper Sulfate			
Bone Ash, 100 lb kegs	lb	.06	.07
Black, 200 lb bbls	lb	...	.03¼
Borax, crys., 500 lb bbls	lb	.04½	.05
Powdered, 300 lb bbls	lb	.04¼	.04½
Kgs 100-150 lb	lb	.04¾	.05¼
Bordeaux Mixture, 16% pd	lb	.11	.13
Paste, bbls	lb	.08	.10
Bromide, see potass. bromide etc			
Butter of Antimony, see Antimony Chloride			
Butyl Acetate normal tk drs wks	gal	1.42	1.45
Drums c-l wks	gal	1.44	1.47
Drums, lc-l wks	gal	1.47	1.50
Secondary 50gal drums	gal	1.00	1.05
Aldehyde 50gal drs wks	lb	.70	.75
Propionate, drs	lb	.34	.36
Stearate 50gal drs	lb	...	.60
Tartrate drs	lb	.57	.60
CADMIUM, metal 100 lb bxs	lb	.70	.75
CALCIUM Acetate 150 lb bgs c-l	100 lb	...	3.50
Arsenate, 100 lb bbls c-l wks	lb	.07½	.08
Bromide, 100 lb cs	lb	...	.60
Carbide, 220 lb dr c-l wks	lb	.05½	.06¼
Carbonate, tech 100 lb bags c-l	100 lb	1.00	1.10
USP, precip, 175 lb bbls	lb	...	.06½
Chloride, solid 650 lb drs c-l f.o.b. wks	ton	21.00	23.00
Drums delvd. NY	100 lb	1.74	1.80
Imp., Shipment	ton	...	19.50
Flake, 375 lb drs c-l drs f.o.b. wks	ton	...	27.00
Drums delvd. NY	100 lb	2.04	2.10
Bags delvd NY	100 lb	2.04	2.10
Nitrate, 220 lb bbls c-l NY	ton	...	52.00

SERVICE

Carload Shipments of the Company's principal products

SULPHURIC ACID
MURIATIC ACID
ACETIC ACID
SODIUM SILICATE
ALUMINUM SULPHATE
GLAUBERS SALT
and others

flow in a constant stream from the nation-wide chain of works and stations.

Vast production facilities, and ample stocks in plant and storage, are of little worth to the customer, if they cannot be made quickly available for his use.

Trains of *General Chemical Company's* tank cars, and fleets of *General Chemical Company's* motor trucks, are ever traversing the nation's railways and highways, linking the Company's plants with the users of the products, delivering those products, in any quantity needed, at the customer's specified time.

A highly organized traffic department routes each shipment and follows it to its destination with painstaking care—one part of the organization and system which has made the name *General Chemical Company* synonymous with "prompt delivery".

GENERAL CHEMICAL COMPANY

40 RECTOR ST., NEW YORK

Cable Address, Lycurgus, N.Y.

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THE NICHOLS CHEMICAL CO., LTD., MONTREAL

Chemicals

CALCIUM, Phos., tech450 lb bbls	lb	.09	.10
Phosphate mono, 325 lb bbls	lb	.07	.08
Stearate, bbls	lb	.23	.35
Sulfocarbolate, 100 lb kegs	lb	.53	.57
CAMPHOR, Amer. ref250 lb bbls	lb	...	.72
2½ lb slabs, 100 lb cs	lb	...	.73½
Jap., ref slabs 100 lb cs	lb	.69	.70
Powdered	lb	...	.80
Crude, 100 lb cs	lb	.54	.56
Carbon Bisulfide 500 lb dr lc-l NY	lb	.05½	.06
c-l drums NY	lb	...	.05¼
Carbon Black, c-l wks bags	lb	.08	.09
100-300 lb cases lc-l NY	lb	...	.12
Decolorizing 40 lb bags c-l	lb	.08	.15
90 lb drums c-l	lb	.08¾	.15¾
Carbon Dioxide, Liquid 20-25 cy	lb	...	.06
Tetrachloride, 1400 lb drs del	lb	.07	.07½
Drums c-l delivered	lb	...	.06¾
Casein, edib., 100 lb kegs	lb	.45	.65
Standard ground	lb	.16¾	.17
Caustic Potash see potash, caustic			
Soda, see soda, caustic			
Cellulose Acetate, 50 lb kegs	lb	...	1.40
Cerium Oxalate USP, 100 lb kegs	lb	.33	.35
Chalk, drop 175 lb bbls	lb	.03	.03¾
Precip., light 250 lb bbls csks	lb	...	.04½
Precip., heavy 560 lb casks	lb	.02¼	.03½
Bulk	ton	...	5.00
Precip, English 7 lb bags	lb	...	.08½
Precip., heavy 560 lb casks	lb	.03½	.03¾
Chinese Blue, See Blue			
Chloramine USP, 200 lb bbls	lb	...	1.75
Chlorocosane 5 lb bot	lb	.55	.65
Chlorhydrin, Ethylene See Ethylene			
CHLORINE, Liquid tank or multi-unit car wks contract	lb	...	.04
Tank car spot wks	lb	...	.04¾
Carlots cyl wks contract	lb	...	.05½
spot wks	lb	...	.05¾
lc-l cyl wks contract	lb	.08	.09
Spot wks	lb	.08¼	.09¼
Chlorobenzene, mono, 100 lb drs wks lc-l	lb	...	.07
CHLOROFORM, USP, 50 lb drs	lb	...	.30
Second hands 650 lb drs	lb	.27½	.28½
Technical 1,000 lb drums	lb	.20	.22
Chlorophyll Oil Sol.	lb	3.75	4.00
Water Sol	lb	.75	4.00
Chromium Acetate 20° sol'n 400 lb bbls	lb	...	.05½
Fluoride, Powd., 400 lb bbls	lb	.27	.28
Oxide, Green bbls	lb	.34½	.35½
Chrome Green, CP	lb	.26	.29
Comm.	lb	.06½	.11
Chrome Yellow	lb	.17	.18½
Clay c-l Bulk, Del.,	ton	16.00	18.00
Powdered 125 lb bags	ton	...	20.00
Coal Tar, See Tars			
Cobalt metal 100 lb kegs	lb	2.50	3.00
Cobalt Oxide 500 lb bbls	lb	2.00	2.10
10 lb tins 200 lb cases	lb	...	2.20
COPPER, metal electrolytic	100 lb	13.42½	13.50
Lake c-l NY	100 lb	13.50	13.62½
Carbonate 400 lb bbls	lb	.16¾	.17¼
Chloride 250 lb bbls	lb	...	.28
Cyanide 100 lb drs	lb	.48	.50
Oxide, red 100 lb bbls tons	lb	.16½	.17
Sub-acetate verd 440 lb bbls	lb	.18	.19
SULFATE crys 450 lb bbls 100 lb		4.90	5.00
Carlots, bbls wks .100lbs		...	4.75
Powd. 350 lb 5bbls	100 lb	...	5.25
Copperas bulk, crystal and sugar c-l wks	ton	...	13.00
200 lb bgs c-l wks	ton	...	15.00
400 lb bbls c-l wks	ton	...	18.00
Powdered bbls	100 lb	1.90	2.00
Sugar, 100 lb bbls	100 lb	1.25	1.35
Cotton Soluble 100 lb bbls wet	lb	.40	.42
CREAM TARTAR, USP, 300 lb bbls	lb	.22	.22¼
Imp., powd., USP, 224 bbls	lb	.21½	.22
Creosote USP 42 lb cbys	lb	.40	.42
Creosote Oil Natural 50gal drs	gal	.20	.21
10-15% Tar acid	gal	.25	.26
25-30% Tar acid	gal	.28	.29
Cresol, USP, 400 lb drums	lb	.20	nom.
Cyclohexanol, see Hexalene			
Cymene, See Para-Cymene			
DIAMINOPHENOL, 100 lb kegs	lb	...	3.80
Diamyl Phthalate drums, wks	gal	2.95	2.97
Dianisidine, 100 lb kegs	lb	3.25	3.35
Dibutyl Phthalate wks	gal	2.75	2.80

kept makers' stocks at a low point has strengthened prices very materially and schedule prices are applied in all instances.

Casein—Factors have advanced their price on imported standard ground to 17c@17½c lb on higher shipment quotations. The demand has fallen off of recent weeks but he market is well maintained. Domestic is on a par as to price and moving fairly well.

Chlorine—Makers report a steadily expanding demand and quote firm unchanged prices.

Chloroform—Market is increasing in firmness for both technical and U. S. P., and prices are firm and unchanged in all directions.

Copper Sulfate—Makers name firm unchanged prices and claim that orders thus far booked for early Spring delivery indicate a demand of sufficient volume to maintain present levels throughout the balance of the year.

Copperas—Demand from red oxde makers has been unusually large. All three factors report a sold-up condition at firm unchanged prices.

Dimethylaniline—In steady routine demand on contracts. Spot business is very slight and makers quote unchanged prices.

Diphenylguanidine—During the past month leading makers reduced the open quotations on several important accelerators, this amongst them, to a level in conformity with the inside prices which were being quoted and the market is now at 68c@72c lb.

Epsom Salts—Makers report a very heavy demand and the market is very strong in tone.

Glauber's Salts—Demand is of good volume but stocks are still large and makers are competing sharply for business.

Glycerin—Market remains weak. The passing of the anti-freeze season has thrown large supplies upon the market. Refiners have large stocks of C.P. which is quoted at 27c lb, but actually moving as low as 25c lb. Refiners are not buying crude and this market is stagnant.

Hydrogen Peroxide—Market is quiet but activity is expected to increase shortly with the season for white goods approaching.

Lead Arsenate—There has been no change in price since the reduction to 14c@14½c lb. Makers were competing for business and

Dibutyl Tartrate, 50gal drums	lb	.55	.65
Dichlorobenzene, 1,000 lb drums	lb	.06	.07
Dichloromethane drums, wks	lb	.23	.25
Diethylamine, 400 lb drs	lb	...	3.15
Diethylaniline, 850 lb drs	lb	.55	.60
Diethyl Carbonate, drums	gal	1.85	2.00
Diethyl Phthalate 1,000 drums	lb	.25	.28
Diethyl Sulfate tech., 50gal drs	lb	.20	.25
Dimethylamine, 400 lb drs	lb	...	2.60
Dimethylaniline 340 lb drs wks	lb	.32	.34
Dimethylsulfate, 100 lb drs	lb	.45	.50
Dinitrobenzene, 400 lb bbls	lb	.15½	.16½
Dinitrochlorobenzene, 400 lb bbls	lb	.15	.16
Dinitrochlorine, 300 lb bbls	lb	.18	.19
Dinitronaphthalene, 350 lb bbls	lb	.32	.34
Dinitrophenol, 350 lb bbls	lb	.31	.32
Dinitrotoluene, 300 lb bbls	lb	.18	.19
Diorthotolylguanidine, 275 lb bbls wks	lb	.85	.90
Diphenylamine	lb	.45	.47
Diphenylguanidine 100 lb bbls	lb	.68	.72
EPSOM SALT, tech., 300 lb bbls NY	100 lb	...	2.00
Bbls c-l NY	100 lb	...	1.75
100 lb c-l NY	100 lb	1.50	1.75
Imp., 20 lb bags c-l		1.05	1.10
USP, 200 lb bbls 10bbls Seaboard	100 lb	...	2.35
Interior	100 lb	...	2.50
Carlots, bbls kegs Seaboard	100 lb	1.90	2.15
Interior	100 lb	2.00	2.25
Imported, 400 lb bbls	100 lb	1.70	2.00
ETHER, USP, 55 lb drums	lb	...	.14
Ethyl Acetate, 99% 50gal drs	gal	...	1.05
35% Ester, 10gal drs	gal	...	.77
Carlots drums	gal	...	.74
Tank cars	gal	...	.72
Refined drums	gal	1.72	1.85
Aceto Acetate drums wks	lb	...	1.00
Benzyl Aniline, 300 lb drs	lb	1.05	1.11
Bromide, 115 lb drs	lb	...	.50
Chloride, 200 lb drs	lb	...	.22
Lactate drums wks	gal	...	3.50
Methyl Ketone, 50gal drs	lb	.30	nom.
Oxalate drums wks	lb	.45	.55
Ethylene-Bromide 600 lb drs	lb	...	.70
Chlorhydrin, anhyd., 50gal drs	lb	.75	.85
40% Solution, 50gal bbls	lb	.25	.30
Dichloride, 50 gal drs.	lb	...	.11
Tank cars	lb	...	.06
Glycol 50gal drums wks	lb	.30	.40
Tri Chloride	lb	.10	.10½
Ethylidenaniline	lb	.62	.65
Feldspar bulk	ton	20.00	25.00
FERRIC CHLORIDE tech., crys. 475 lb bbls	lb	.07½	.09
Imported	lb	.04¾	.05
C.P., crys., 100 lb kegs	lb	...	.10
Imported	lb	.06	.06½
Neut. Soln. 42° 140 lb cbys	lb	.06½	.07
46° 140 lb cbys	lb	.08	.08½
USP, Soln 125 lb cbys	lb	.06½	.07
Bromide solution	lb	...	.55
Ferrous Bromide sol'n	lb	...	.55
Chloride cryst tech 475 lb bbls	lb	.05	.06
Sulfide 1000 lb bbls	100 lb	2.50	3.00
Fiske-White see lead White			
Fluorspar, 95% 220 lb bags ex-dock	ton	...	25.00
98% bags	ton	...	33.50
98% bags	ton	...	35.00
FORMALDEHYDE USP, 400 lb bbls c-l wks	lb	...	.11¼
Bbls 400 lb lc-l wks	lb	.11½	.11¾
Formaldehyde Aniline 100 lb drs	lb	.39	.42
Furfural 500 lb drums	lb	...	.17½
Tanks, wks	lb	...	.15
Fusel Oil 10% Impurities drs	gal	...	1.60
G SALT paste 360 lb bbls basis 100%	lb	.50	.52
GLAUBER'S SALT, tech., 200 lb bags c-l wks	100 lb	1.05	1.10
lc-l wks	100 lb	1.15	1.20
350 lb bbls c-l wks	100 lb	...	1.10
Bbls lc-l wks	100 lb	1.25	1.35
Imported bags NY	lb	.75	.80
Calcined, see Sodium Sulfate			
GLYCERIN, CP, 550 lb drums	lb	.29	.30
Cans, 50 lb	lb	...	.31
Dynamite, 100dr	lb	...	.27
Saponification tanks	lb	...	.20¼
Soap, Lye tanks	lb	...	.18

Modern
ALCHEMISTS

NOT long ago, as time is reckoned, many men spent their entire lives in fruitless efforts to learn the secret of compounding gold. Like those who sought the mythical treasures at the end of the rainbow, they never succeeded.

Modern alchemists, however, *have* found the formula —not of gold but its immediate equivalent—SUCCESS. Though considered by many as mysterious as the secret of making gold, the formula is really composed of simple ingredients and the only requirement for successful operation is that it be strictly adhered to. This formula is: Highest Quality, Absolute Uniformity, Unexcelled Service.

You, as a purchaser, want these essentials combined in whatever product you buy. You are assured of them all in Victor products because the Victor Chemical Works follows the open secret of the modern alchemist by giving their customers the full benefit of highest quality, absolute uniformity, and unexcelled service.

OXALIC ACID
PHOSPHORIC ACID
MONO-CALCIUM PHOSPHATE
DI-CALCIUM PHOSPHATE
TRICALCIUM PHOSPHATE
MONO-SODIUM PHOSPHATE
TRISODIUM PHOSPHATE
SODIUM PYRO PHOSPHATE
AMMONIUM PHOSPHATE
EPSOM SALTS
SODIUM AMMONIUM PHOSPHATE

Victor Chemical Works
343 So. Dearborn Street
Chicago

Chemicals

Hexalene, 50gal drs., wks	lb	...	.45
Hexamethylenetretramine drs	lb	.80	.82½
HYDROGEN PEROXIDE, 10 vol			
400 lb bbls	lb	.04¾	.05
15vol	lb	.06	.06¼
17vol	lb	.06¼	.06½
25vol	lb	.06½	.06¾
100vol 140 lb cbys	lb	.30	.31
IODINE, crude 200 lb kegs	lb	4.20	4.25
Iridium, metal, 10oz lots	oz	...	260.00
Iron, metal by hydrogen 1 lb bot	lb	.68	.70
IRON Chloride see Ferric or Ferrous			
Nitrate, kegs	lb	.09	.10
Com'l bbls	100 lb	2.50	3.25
Oxide, red Spanish	lb	.02½	.03¼
English	lb	.10	.12
Perchloride ,see Ferric Chloride			
Isopropyl Acetate 50gal drums	gal	.85	.90
Kaolin see Clay			
LANOLIN, see Adeps Lanae			
LEAD, metal c-l NY	100 lb	...	7.65
Acetate, white crystals 500 lb bbls wks	100 lb	14.00	14.50
100 to 250 lb kegs wks	100 lb	...	15.00
White, broken bbls wks	100 lb	14.50	15.00
White, gran bbls wks	100 lb	14.50	15.00
White, powd bbls wks	100 lb	14.75	15.25
Brown, broken bbls wks	100 lb	13.00	13.50
Arsenate, 100 lb kegs	lb		
Bbls., c-l wks	lb	...	.14
Bbls, lc-l wks	lb	.14½	.15
Paste, 100 & 600 lb bbls	lb	.08	.09
Nitrate, 500 lb bbls wks	lb	...	.14
Oxide, Litharge 500 lb bbls	lb	...	.10¼
100 kegs wks	lb	.14¼	.15¾
Oxide, red, 500 lb wks	lb	...	.10¾
100 lb kegs wks	lb	.12¾	.16¼
Oleate, bbls	lb	.17½	.18
Peroxide, 100 lb drs	lb	.25	.30
White, basic carb., 500 lb bbls wks	lb	...	.09¾
100 lb kegs wks	lb	.14¼	.15¾
White sulfate 500 lb bbls wks	lb	.09	.09½
LIME, (Salts, see Calcium Salts)			
Ground Stone, bags	ton	...	4.50
Live, bulk	ton	...	8.50
Live, 325 lb bbls tons wks 100 lb		...	1.05
Hydrated, 167 lb bbl ton lots wks	100 lb	...	.35
Single bbl wks	lb	...	.01
Oyster Shell 150 lb bbl sing	lb	...	.03½
Sulfur dry 200 lb drs NY	lb	...	.08½
Drs. c-l NY	lb	...	.07½
33° Sol'n 50 lb bbls NY	gal	.15	.15½
Litharge see lead oxide			
Lithium Carb., USP 100 lb kegs	lb	1.48	1.60
Bromide 100 lb cs	lb	1.80	1.90
Lithopone, 400 lb bbls lc-l wks	lb	...	.06½
Bbls., c-l wks	lb	...	.05⅞
Bags c-l wks	lb	...	.05⅝
Imported, 400 lb bbls	lb	.05¾	.06
MAGNESITE, calcined, 500bbls	ton	48.00	50.00
Magnesium mtl., sticks 100 lb cs Wks.	lb	...	.80
Carb., tech., 70 lb bags NY	lb	.06	.06½
75 lb bbls NY	lb	.08	.08½
USP, 100 lb bbls	lb	.09½	.10
English ox blocks	lb	.17	.19
MAGNESIUM, Chloride, flake 575 lb drs. c-l wks	ton	...	37.00
Imp., Flake Shipt.	ton	...	33.00
Imp., fused 900 lb bbls NY	ton	...	31.00
Fluosilicate cryst400 lb bbls wks	lb	.10	.10½
30% sol'n 500 lb bbls wks	lb	.07	.07½
Sol'n. bbls., c-l wks	lb	...	.06
Oxide, USP, light 100 lb bbls	lb	...	.42
USP, heavy 250 lb bbls	lb	...	.50
Salicylate, 100 lb kegs	lb	.75	.80
Stearate bbls	lb	.23	.25
Sulfate, see Epsom Salts			
Manganese Borate, 30% 200 lb bbls	lb	...	.24
100 lb kegs	lb	...	.25
Chloride, 600 lb csks	lb	.08	.08½
Dioxide, 80-84% 900 lb bbls NY	ton	80.00	85.00
85-90% 900 lb bbls NY	ton	85.00	90.00
Hydrated, precip 100 lb kegs	lb	.15	.23
Ore, bulk elf NY	lb	.35	.40
Sulfate, 550 lb drums NY	lb	.07	.07¼

on a light demand, shading of prices forced the reduction in the open price.

Lead, Red—Prices have shown no change on red lead or litharge. Consuming demand is limited at the moment, but makers look to a picking up of business within the next two weeks.

Mercury—Market has eased off a little and importers quote $101.75 @$102.25 per flask.

Meta-Nitro-Para-Toluidine—Market is steady at $1.70 lb in all directions, although imported competition is reported to have been met at lower figures in some instances.

Methanol—Rumors of price cutting on pure material were unconfirmed. It has been known that there has been plenty of pure material on hand due to the fact that imported material was heavily imported prior to the duty advance and this probably has caused weakness among holders. Methyl acetone was in demand and prices were maintained.

Naphthalene—Demand is increasing with the approach of Spring and prices are firm although unchanged.

Nickel Salts—Movement has been very heavy and prices have been increasingly firm with the scarcity that has resulted.

Ortho-Nitro-Toluene—Market is firm and unchanged in all directions. Makers are unwilling to shade prices the slightest degree due to the absence of any market for the para salt.

Ortho-Toluidine—Makers are very firm in their quotations and are likely to advance their schedules at any time. Flotation of ores continues to absorb increasing amounts.

Para-Nitroaniline—Makers are all quoting firm unchanged prices and report a steadily increasing demand.

Para-Toluidine—Large stocks remain in makers' hands with no apparent outlet. Prices remain unchanged but any large consumer can name his own figures within reason.

Phenol—Makers are in possession of large stocks and demand is of small routine volume. Prices are unchanged but the position is not strong.

Phthalic Anhydride—Demand is normal and prices are firm and unchanged in all quarters.

Pyridine—Market is dead. De-

MERCURY, metal 75 lb flask	flask	102.00	103.00
Meta-Nitro-aniline	lb	.72	.74
Meta-Nitro-para-Toluidine, 200 lb bbls	lb	...	1.70
Meta - Phenylenediamine, 300 lb bbls	lb	.90	.94
Meta - Toluylenediamine, 300 lb bbls	lb	.72	.74
Tanks	lb	...	.70
METHANOL (Wood Alcohol) drms. 95%	gal	...	.80
Drums, c-l	gal	...	.83
Drums, lc-l	gal	...	.85
97% tanks	gal	...	.82
Drums, c-l	gal	...	.85
Drums, lc-l	gal	...	.87
Pure, Acetone free, tanks	gal	...	.85
Drums, c-l	gal	...	.88
Drums, lc-l	gal	...	.90
U. S. denat., grd., tanks	gal	...	.80
Drums, c-l	gal	...	.83
Methyl Acetate drums	gal	...	.95
Methyl Acetone, 100gal drums	gal	.88	.90
Tank cars	gal	...	.85
Chloride, 90 lb cyl	gal	.55	.60
Monobromobenzene See Bromobenzene			
Monacetine, See Acetine			
Monochlorobenzene, see Chlorobenzene			
Monethylaniline, 900 lb drs	lb	...	1.05
Monomethyl paraminophenol sulfate 100 lb drs	lb	3.95	4.20
NAPHTHA, see Solvent Naphtha			
NAPHTHALENE, Fiske, 175 lb bbls wks	lb	.04½	.05
Balls, 250 lb wks	lb	.05½	.06
Crushed, chipped bgs wks	lb	...	.04¼
Crude, imp., bags	lb	.02	.02¼
NICKEL, Ingot 100 lb kegs	lb	...	.35
Chloride, bbls kegs	lb	.21	.24
Oxide, 100 lb kegs NY	lb	.35	.38
Salt single 400 lb bbls NY	lb	.08	.08½
Double 400 lb bbls NY	lb	.08½	.09
Sulfate, See Nickel Salt single			
Nickel Metal, electrolytic	100 lb	...	84.00
Nicotine, Free, 40% 8 lb tins cs	lb	1.25	1.30
Nicotine Sulfate 10 lb tins	lb	...	1.10
NITRATE SODA, spot, See Sodium Nitrate			
Nitre Cake, bulk wks	ton	4.50	5.50
500 lb bbls	ton	13.00	14.00
Nitrobenzene, Redistilled 1000 lb drs. wks	lb	.09¼	.10¼
Nitronaphthalene, 550 lb bbls	lb	...	.25
Nitrotoluene, mixed 1,000 lb drs wks	lb	.14	.15
Oil Fusel, See Fusel Oil			
Oil Mirbane, see nitrobenzene			
Orange Mineral, 1100 lb csks NY	lb	...	.14½
700 lb bbls NY	lb	...	.14¾
Ortho-Aminophenol, 50 lb kegs	lb	2.20	2.25
Ortho-Anisidine, 100 lb drs	lb	2.35	2.50
Ortho-Dichlorbenzene, see Dichlorbenzene			
Ortho-Nitrochlorobenzene, 1,200 lb drs. wks	lb	.32	.35
Ortho-Nitrophenol, 350 lb	lb	.85	.90
Ortho-Nitrotoluene, 1,000 lb drs wks	lb	.13	.14
Ortho-Toluidine 350 lb bbls	lb	.25	.27
PALLADIUM, metal 10oz lots	oz.	80.00	81.00
Para-Aminoacetanilid, 100 lb kgs	lb	1.00	1.05
Para-Aminophenol, 100 lb kegs	lb	...	1.15
Hydrochloride, 100 lb kegs	lb	1.25	1.30
Para-Dichlorbenzene, 150 lb bbls wks	lb	.17	.20
25-50 lb kegs	lb	.20	.21
Paraldehyde 10-55gal drs USP tech	lb	.26	.28
Para-Cymene Ref'd. 110gal drs.	gal	2.25	2.50
Paraformaldehyde USP 100 lb cs	lb	.53	.53½
Para-Nitroacetanilid, 300 lb bbls	lb	.50	.55
Para-Nitroacetanilid 300 lb bbls	lb	.50	.55
PARA-NITROANILINE, 300 lb bbls wks single bbls	lb	.52	.53
Para-Nitrochlorobenzene, 1,200 lb drs wks	lb	...	.32
Para-Nitro-ortho Toluidine, 300 lb bbls	lb	2.75	2.85
Para-Nitrophenol, 185 lb bbls	lb	.50	.55
Para-Nitrosodimethylaniline, 120 lb bbls	lb	.92	.94
Para-Nitrotoluene, 350 lb bbls	lb	.25	.30
Para-Phenetidin, 500 lb drs	lb	1.55	1.80

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Para-Phenylenediamine
Sal Soda

Chemicals

Salt Common
Sodium Oxalate

Para-Phenylenediamine 350 lb bbls lb	...	:	1.20
Para - Toluene-Sulfonamide, 175 lb bbls lb	.40	:	.41
Para - Toluene-Sulfonchloride, 410 lb bbls wks lb	.18	:	.30
Para-Toluidine, 350 lb bbls wks lb	.45	:	.47
PARIS GREEN,			
Arsenic Basis, 500 lb kegs lb	.19	:	.20
Kegs, 100 lbs lb	.21	:	.22
Paris White, see Whiting French			
PETROLATUM, green 300 lb bbls lb	.02½	:	.03
Dark Amber, 300 lb bbls lb	...	:	.04¼
Light Amber, 300 lb bbls lb	...	:	.04½
Phenol, see also acid carbolic 950 lb drums wks lb	.16	:	.17
Small drums 250-100 lb lb.	.17	:	.18
Natural 240 lb des drs wks lb	...	:	...
Phenyl-Alpha-Naphthylamine 100 lb kegs lb	...	:	1.35
Phosphorus, red 110 lb cs lb	...	:	.65
Yellow 110 lb cs wks lb	...	:	.32
Imported, 110 lb cs wks lb.	.35	:	.37½
PhosphorusOxychloride 175 lb cyl lb	.35	:	.40
Phosphorous Sesquisulfide 100 lb cases lb	...	:	.46
Phthalic, Anhydride, 100 lb bbls wks lb	.18	:	.20
Pitch, Coal-Tar wks ton	24.00	:	26.00
Plaster Paris, tech 250 lb bbls bbl	...	:	3.30
Platinum metal soft, 10oz lots oz	109.00	:	110.00
POTASH SALTS, rough			
Pot. Muriate basis 80% bgs ton	...	:	36.40
Pot. Sulfate, basis 90% bgs ton	...	:	47.30
Pot. & Mag. Sulfate basis 48% bags ton	...	:	27.00
Manure Salts basis 30% bulk ton	...	:	18.75
Manure Salts basis 20% bulk ton	...	:	12.40
Kainit, basis, 12.4% bulk ton	...	:	9.00
Kainit, basis, 14% bulk ton	...	:	9.50
tons 10%			
Bulk in bags $2.00 extra			
Prices cif. Atlantic&Gulf Ports			
POTASSIUM Acetate, USP, 100 lb kegs lb	.29	:	.30
Bicarbonate USP 320 lb bbls lb	.09	:	.09½
Bichromate, crys., 725 lb csks lb	.08¼	:	.08⅝
Powd., 725 csks wks lb	.12	:	.12½
Binoxalate, 300 lb bbls lb	.16	:	.17
Import, 112 lb bbls lb	.18	:	.19
Bisulfate, 100 lb kegs lb.	...	:	.30
BROMIDE, USP, cryst, gran, 100 lb bbls lb	.48	:	.49
Imported, USP, 220 lb cs lb	.38	:	.41
CARBONATE, 80-85% calc. 800 lb cks lb	.05⅝	:	.05¾
80-85% hydrated cks lb	.05⅝	:	.05½
90-95 calc. casks lb	.06¼	:	.06½
96-98% calc. casks lb	.06¾	:	.07
99% calc casks lb	...	:	.07½
USP 100 lb kegs lb	.11	:	.11½
99% CP, casks lb	...	:	.12½
Chlorate cryst powd 112 lb kegs wks lb	.08½	:	.09
Imp., 112 lb NY lb	.08¼	:	.08½
Gran. Imp., 112 lb kegs NY lb	.10½	:	.11
Chloride, crys., bbls lb	.05⅝	:	.05½
Chromate, kegs lb	.27	:	.28
Citrate, USP, 50 lb lb	...	:	.60
Cyanide 110 lb cases lb	.55	:	.57½
Metabisulfite, 300 lb bbls lb	.11½	:	.12
Imp., 550 lb bbls lb	.11½	:	.12
Nitrate, see Saltpetre			
Oxalate, neutral, 225 lb bbls lb	.16	:	.17
Perchlorate 112 lb kegs lb	.11	:	.12
PERMANGAN, USP, crys., 500 lb & 100 lb drs wks lb	.14¼	:	.14½
Imp., 113 lb drs lb	.13½	:	.14
Prussiate red, 112 lb kegs lb	.37½	:	.38
Prussiate, yellow 500 lb casks lb	.18	:	.18½
Tartrate, neutral 100 lb kegs lb	...	:	.51
Titanium Oxalate, 200 lb bbls lb	...	:	.25
Pyridine, 50 gal drs. gal	2.25	:	2.30
QUICKSILVER, see Mercury			
Quinone, 100 lb kegs lb	1.75	:	2.25
R SALT, 250 bbls wks lb	.45	:	.46
Red Lead, See Lead Oxide			
Rochelle Salt, USP, 225 lb bbls lb	.20	:	.20½
Imp., USP, 300 lb bbls lb	.19	:	.19½
Sal Ammoniac, see Ammon. Chloride			
Sal Soda, see Sodium Carbonate			

naturers are in possession of supplies which they bought some time ago at $2.25 gal. and are now unwilling to take on further supplies at any price.

Soda Ash—Makers report a steady demand but easy supplies and competitive prices.

Soda Caustic—Situation shows no change. Production is large despite the increased consumption and excess supplies are continually finding their way into the market at prices below schedule and unsettling conditions generally. However, large consumers who must be under contract are taking very large quantities at firm prices and on the whole there is nothing to cause worry to the maker.

Sodium Fluoride—Although importers' prices are still above domestic makers prices, 8¾c@9c lb, the domestic maker claims that the quality of his material has been improved to such an extent that it is equal in quality to any imported material.

Sodium Nitrate—The movement in the "rush season" has not been too encouraging, although stocks are in very small supply at all points, particularly South Atlantic ports. The market is held firm at $2.67 100 lbs. because of this shortage of stocks.

Vermilion—Agents for imported material here are now quoting $1.65@$1.70 lb and having no trouble at selling at the inside figure.

Zinc Sulfate—Makers name 3¼c lb for carlots. The higher price is caused by the fact that makers have not been realizing a satisfactory margin of profit for some time.

OILS AND FATS

Castor Oil—Leading factors have advanced the price ½c lb on higher costs and a continued good demand. Sales are now being made at 14½c@15c lb for No. 1 and 14c @14½c lb for No. 3.

Chinawood Oil—Again the strong feature of the market spot Chinawood advanced sharply over the week to 27½c@29c lb as to seller and quantity. Tanks on spot are reported as unobtainable and April from the Coast is held in all directions at 21c lb. The shortage on spot is becoming acute and those sellers who have stocks are not offering, but are naming prices on request to buyers who are in need of oil.

Salt, Common, see Sodium Chloride			
Salt Cake 94-96% c-l wks ton	19.00	:	20.00
White 87% wks ton	15.00	:	17.00
SALTPETRE, Double refined Granular, 450-500 lb bbls lb	.06⅜	:	.06¼
c-l wks lb	...	:	.06
Powdered, bbls c-l wks lb	...	:	.07¼
Large Crystals, bbls c-l wks lb	...	:	.08
Triple Refined Gran bbls wks lb	.06⅝	:	.06¾
Satin White, 500 lb bbls lb	...	:	.01½
SILICA Crude, bulk, mines ton	6.00	:	7.00
Refined, floated bags ton	15.00	:	30.00
Air floated bags ton	32.00	:	50.00
Extra, floated, bags ton	55.00	:	65.00
SILVER, Metal American oz oz	...	:	.59½
SODA ASH, 58% light bags delivered NY 100lbs	2.14	:	2.29
bbls., delvd. NY 100 lb	2.39	:	2.54
Contract, c-l,bgs,wks. 100 lb	...	:	1.32½
58% dense c-l bgs.wks. 100 lb	...	:	1.32½
Spot 5c 100lbs differential			
CAUSTIC, 76% solid drums delv'd NY 100 lb	3.76	:	3.91
Ground & Flake 76% drums del., NY 100 lb	4.16	:	4.31
bbls del. 100 lb	4.41	:	4.56
Contract c-l wks 100 lb	...	:	3.00
Spot c-l wks 100 lb	...	:	3.10
Ground & Flake, 76%, Spot, wks c-l 100 lb	...	:	3.50
USP, stick, 10 lb cans lb	.19	:	.21
Pure, stick, by alcohol lb	.25	:	.27
Soda Sal. see Sodium Carbonate			
Sodium Metal, 12½ lb bricks lb	...	:	.27
SODIUM ACETATE, crys 450 lb bbls wks lb	.04½	:	.05
Aluminate, 500 lb bbls wks lb	.07½	:	.08
Aluminum Sulfate, see Alum Soda			
Arsenate, 4 lb mtl. wks drms gal	.50	:	.60
Drums, 8 lb material wks gal	1.00	:	1.20
Bicarbonate 400 lb bblsNY100 lb	...	:	2.41
Bbls c-l wks 100 lb	...	:	2.00
112 lb kegs c-l wks lb	...	:	2.25
112 lb kegs c-l wks 100 lb	...	:	2.25
Bichromate, 500 lb casks wks lb	.06¼	:	.06¾
Bisulfite, dry powder 500 lb bbls wks lb	...	:	.08½
Imported lb	...	:	.08
BROMIDE, USP, 100 lb cs lb	.48	:	.49
Imp. USP., 220 lb cases lb	.44½	:	.45
Carbonate 350 lb bbls NY 100 lb	1.30	:	1.35
Works c-l 100 lb	1.10	:	1.30
Monohydrate, 400 lb bbl 100 lb	...	:	2.40
Pure photographic 100 lb Imported, 112 lb kegs lb	.06¼	:	.06½
Chloride, tech ton	12.00	:	13.00
CP, 300 lb bbls lb	.05	:	.06
Chlorate, 112 lb kegs wks lb	.06¼	:	.06½
kegs lb	.06	:	.08
Chromate, 800 lb bbl lb	...	:	.08
Cyanide 96-98% 100 & 250 lb drums wks lb	...	:	.20
c-l wks lb	...	:	.19
Imp., 95-97% 100 lb drs lb	.18	:	.19
Fluoride, 300 lb bbls wks lb	.08¾	:	.09
Imp., 700 lb cks lb	.09	:	.10
Hydroxide, see Soda Caustic			
Hypochlorite Soln 100 lb cbys lb	...	:	.05
14½ soln 50 lb cbys lb	...	:	.04
Hydrosulfite200 lb bbls fobwks lb	.22	:	.24
HYPOSULFITE, tech., pea crys 375 lb bbls., wks 100 lb	2.65	:	3.05
Bbls., c-l wks 100 lb	...	:	2.50
100 lb kegs wks 100 lb	2.80	:	2.90
Imp. 100 lb	2.75	:	3.00
Regular crys., bbls wks 100 lb	2.40	:	2.65
Bbls., c-l wks 100 lb	2.40	:	2.50
Kegs, wks 100 lb	2.35	:	2.45
Imp. 100 lb	2.35	:	2.45
Metanilate, 150 lb bbls lb	.70	:	.75
Molybdate, 100 lb kegs lb	...	:	1.10
Naphthionate, 300 lb bbls lb	.55	:	.57
Nitrate crude, 95% 200 lb bgs c-l NY 100 lb	...	:	2.67
Mar Shipment 100 lb	...	:	2.67
Double Refined 400 lb bbls Gran c-l wks lb	...	:	.03¾
Nitrite, 500 lb bbls spot mkrs lb	.08¾	:	.09
Imp., 650 lb casks lb	.08¾	:	.09
Ortho - Chloro - Tolune Sulfonate 175 lb bbls wks lb	.25	:	.27
Oxalate, neutral, 100 lb kegs lb	.20	:	.23

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Solvay Sodium Nitrite
Solvay 58% Soda Ash
Dense—Light
Solvay Fluf (Extra Light Soda Ash)
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Solvay Snowflake Crystals
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Solvay Tanners Soda
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Chemicals

Sodium Perborate Tin Tetrachloride			
SODIUM (Continued)			
Perborate, 275 lb bbls	lb	.21	.22
Peroxide, 200 lb cases	lb	.23½	.24
Phosphate, di-sodium tech 550 lb bbls	100 lb	3.25	3.55
Imp	100 lb	...	3.25
Mono-sodium 100 lb kegs	lb	.30	.31
Tri-sodium tech c-l bbls 100 lb		...	3.90
Picramate, 100 lb kegs	lb	...	.69
Para-Toluene Sulfonate 175 lb bbls	lb	.08	.09
PRUSSIATE, yellow 350 lb bbls wks	lb	.12	.12½
Imp., 50 lb cks	lb	.10⅞	.11
Pyrophosphate, 100 lb kegs	lb	.13⅛	.14
Salicylate, 100 lb kegs	lb	.37	.38
Silicate, 40° turbid, tanks wks	100 lb	...	.75
55gal drums wks	100 lb	.85	1.10
40° clear, tanks wks	100 lb	...	1.10
55gal. drs wks	100 lb	1.20	1.45
42° turbid tks., wks	100 lb	...	.80
55gal drs wks	100 lb	.90	1.15
42° clear, tanks wks 100 lb		...	1.25
55gal drs., wks	100 lb	1.35	1.75
Silicofluoride, 450 lb bbls NY	lb	.04⅛	.05
Stannate, 100 lb drums	lb	.48⅛	.49
Sulfanilate 400 lb bbls	lb	...	.16
Sulphate, see Glauber's Salt			
Sulfate, Anhydrous 550 lb bbls c-l wks	lb	.02¾	.02¾
Imp., 250 lb bbls	lb	.01⅞	.02
Sulfide, 60% solid, 650 lb drs lc-l wks	lb	.03¼	.04
Drs., c-l wks	lb	...	.03½
Imp., 700 lb drs NY	lb	.03	.03½
60% brkn. 650 lb drs wks	lb	.04	.04¼
Drs., c-l wks	lb	...	.03¾
30% crys 440 lb bbls wks	lb	.02½	.02¾
Imp., 400 lb bbls	lb	.02¼	.02½
Sulfite, cryst 400 lb bbls wks	lb	.03¼	.03½
Anhydrous USP, 100 lb kgs	lb	.08½	.09
Sulfocarbolate USP 100 lb kgs	lb	.32	.34
Sulfocyanide, 400 lb bbls	lb	.40	.45
Tungstate, cryst., 100 lb kegs	lb	.80	.82½
SOLVENT NAPHTHA, 110gal drs wks	gal	...	.40
8,000gal tank cars wks	gal	...	.35
STRONTIUM, Bromide, USP, 50 lb kegs	lb	.51	.52
Carbonate, 600 lb bbls wks	lb	.07¼	.07½
100 lb kgs wks	lb	...	.08
Nitrate, 600 lb bbls NY	lb	.08	.08½
SULFUR Crude, fob mines	ton	18.00	19.00
Brimstone Broken Rock 250 lb bgs c-l	100 lb	...	2.05
Less c-l bbls NY	100lbs	2.35	2.55
Roll, 150 lb bgs c-l NY 100 lb		...	2.25
Less c-l bbls NY	100 lb	2.65	2.85
Flour, Heavy bgs c-l	100 lb	...	2.50
Light, 100% bags c-l 100 lb		...	2.60
Rubbermakers 100% 240 lb bbls. c-l bags NY 100 lb		...	2.60
Comm'l 99% c-l 150 lb bgs NY	100 lb	...	1.45
For Dusting c-l 99¼% 100 lb bags NY	100 lb	...	2.40
Flowers 100% 155 lb bbls NY c-l	100 lb	...	3.45
Precipitated 125 lb bbls NY	lb	...	.17
Lac., 125 lb bbls NY	lb	...	.12
Sulfur Chloride, red, 700 lb drs wks	lb	.05	.05½
150 lb cbys wks	lb	...	.06½
Yellow, 700 lb drs wks	lb	.03¾	.04⅛
Sulfur Dioxide, 100 lb cyl	lb	.17	.19
Sulfuryl Chloride, 600 lb drs	lb	.65	.70
Tar Coke Oven, Tks., wks	gal	.07	.08
Water Gas, Tks., wks	gal	...	.08
Terra Alba No 1 300 lb bbls 100 lb		1.85	1.90
Tetralene, 50gal drs wks	lb	...	.20
Thiocarbanilid, 170 lb bbls	lb	.22	.24
TIN, metal Straits, NY	lb	...	.68½
99% American NY	lb	...	.69
Bichloride, 50% sol'n. 100 lb bbls wks	lb	...	.20¾
Crystals, 500 lb bbls wks	lb	...	.48
100 lb kegs wks	lb	...	.48¾
Oxide, 300 lb bbls wks	lb	...	.70
100 lb kegs wks	lb	...	.72
Recovered bbls	lb	...	.68
Tetrachloride, 100 lb drs wks	lb	...	.41

Coconut Oil—Has been rather quiet during the past week although some business has been done here for prompt shipment from the Coast on Manila oil at 8⅛c@8¼c lb. Spot barrels are unchanged at 9½c@9¾c lb on a routine inquiry.

Corn Oil—On the easier position of cottonseed oil, crude corn oil at the mills is offered lower in most quarters this week at 8½c@9c lb with fair interest.

Cottonseed Oil—Since last reported cottonseed has reacted from its upward climb and refined oil is offered now at 9.40c lb on this market, representing a reduction of over ½c lb for the week with forward position ranging to 9.65c lb to September. Crude oil is also down and Southeast and Texas are quoted at 7¾c lb and Valley at 7⅞c lb. This movement seems in line with the persistent predictions that the market would not recover from the big crop without a setback of some sort before Spring.

Greases—Sale is in fair volume with producers here quoting lower prices on 10¼c lb on choice white and 7c lb for house. Yellow is unchanged at 7¼c lb and brown is higher at 6⅝c lb.

Lard Oil—Edible prime oil continues firm and was again advanced on spot to 15¼c lb. Off prime is quiet and unchanged at 13¾c lb. Extra and No. 1 are unchanged but extra No. 1 and No. 2 are higher at 11½c lb and 10¾c lb respectively.

Linseed Oil—Open quotations have been advanced to 10.5c lb for carlots of raw oil in barrels. The market is firmer than it has been but on a large inquiry crushers will shade to 10.3c lb. Inquiry from the paint trade was very good over last week but quieted down at the beginning of this week.

Neatsfoot Oil—The position on spot is generally unchanged with an average volume of business passing at current quotations of: 15¾c lb for 20; 12¾c lb for pure; 15¾c lb for CP; 11¾c lb for extra and 11c lb for No. 1.

Oleo Oil—No. 1 has again advanced 1c lb over the week and sales are being made at the moment at 13½c lb for No. 1; 9½c lb for No. 2 and 9c lb for No. 3.

Olive Oil—For the first time in some months the market shows no change this week. Spot oil is quoted at $1.60@$1.65 gal. with the possibility of shading this figure on a bid. Spot foots are being sold at

Titanium Oxide Degras			
Titanium Oxide, bbls wks	lb	.13	.14
Tolidine, 350 lb bbls	lb	.90	.94
Toluene, 8,000gal tnk cars wks	gal	...	.35
110gal drs wks	gal	...	.40
Toluidine, Mixed, 900 lb drs wks	lb	.31	.32
Toner Lithol Red bbls	lb	.85	.90
Para Red bbls	lb	.75	.80
Toluidine	lb	1.75	1.80
Triacetin, 50gal drs wks	gal	3.60	3.90
Tribromphenol, 100 lb cases	lb	...	1.10
Triphenylguanidine	lb	.69	.73
Triphenyl Phosphate, 450 lb bbls	lb	...	.75
Tungsten, NY WO	unit	11.75	13.00
Ultramarine Blue	lb	.15	.25
Urea Pure, 112 lb cases	lb	.18	.20
Venetian Red	lb	...	.60
Vermilion Amer., 100 lb bags	lb	...	1.55
English kegs	lb	1.55	1.60
WHITE LEAD, see lead, white			
XYLENE, 3° 8,000 gal. tanks wks NY	gal	...	.55
5° tanks wks	gal	...	.45
10° tanks wks	gal	...	.38
Com'l tanks wks	gal	...	.36
Drum lots 5c gal higher			
Xylidine crude	lb	...	.35
Refined	lb	.38	.40
ZINC METAL, high grade slabs c-l NY	100 lb	...	7.15
Ammonium Chloride, powd 400 lb bbls	lb	...	.06¼
Carb., tech., bbls NY	lb	.09½	.10
USP, 100 lb kegs	lb	...	.20
Chloride, fused 600 lb drs wks	lb	...	.06
Drs., c-l wks	lb	...	.05¾
Granulated, 500 lb bbls wks	lb	.06¼	.06½
Imported, dr NY	lb	.06¼	.06¾
Solution 50% tnks wks 100 lb		...	3.00
Cyanide, 100 lb drs	lb	.40	.41
Dust, 100 lb tins wks	lb	...	.10
500 lb bbls kegs c-l wks	lb	...	.09
Oxide, Amer., bags wks	lb	.07⅜	.7⅝
Amer., 300 lb bbls wks	lb	.07⅜	.07⅞
French, 300 lb bbls wks	lb	.10⅜	.12⅝
Bbl c-l wks	lb	.10⅜	.12⅝
Bags c-l wks	lb	.10⅛	.12½
USP, 100 lb bbls c-l	lb	...	.14
10-25 bbl lots	lb	...	.15
5bbl lots	lb	...	.16
1bbl lots	lb	...	.17
Imported, white seal, bbls	lb	.12	.13½
Green seal, bbls	lb	.11½	.12
Red seal bbls	lb	.10½	.11
Stearate, USP, 50 lb bbls	lb	.20	.21
Sulfate, 400 lb bbls wks	lb	.03½	.03¾
Bbls c-l wks	lb	...	.03¼
USP, 100 lb bbls	lb	.08	.09
Sulfide, 500 lb bbls	lb	.30	.32
Sulfocarbolate, 100 lb kegs	lb	.29	.30

Oils & Fats

Castor, No. 1, 400 lb bbls	lb	.14½	.15
80 lb cases	lb	.15½	.16
No. 3	lb	.14	.14½
Blown, 400 lb bbls	lb	...	.18
China Wood bbls spot NY	lb	.27½	.29
Tanks, Spot NY	lb	...	nom.
Coast tanks—April	lb	.21	.22
Coconut Ceylon 375 lb bbls NY	lb	.09½	.09¾
8,000 gal tanks NY	lb	.08½	.08¾
Cochin, 375 lb bbls NY	lb	.10	10¼
Tanks, NY	lb	...	.09¼
Manila bbls NY	lb	.09½	.09¾
Tanks NY	lb	.08½	.08¾
Tanks Pacific Coast	lb	.08⅛	.08¼
Edible bbls NY	lb	.12	.12½
Cod Newfoundland, 50gal bbls	gal	.66	.68
Tanks, NY	gal	.59	.61
Cod Liver, see Cod Liver Oil under Chemicals			
Copra, bags	lb	.06	.06¼
Corn, ref. 375 lb bbls NY	lb	.13	.13½
Tanks	lb	.11½	.12
Crude tanks mills	lb	.08½	.09
Bbls NY	lb	.10¼	.10½
Cottonseed Crude, mill	lb	.07¾	.08
PSY, 100 bbls spot	lb	...	.09½
Mar.-Apr.	lb	.09½	.09⅝
White, 100 bbls lots NY	lb	...	.13½
Degras, Amer., 50gal bbls NY	lb	.04¼	.04½
English, light bbls NY	lb	.05¼	.05½
Brown, bbls NY	lb	.04⅝	.04¾

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Oils & Fats

Albumen, Egg Edible
Glue

Degras, Eng.,light brn,bbls,NY..lb	.04½	:	.04¾
Light brown bbls NY lb	.04½	:	.04¾
Dark, bbls NY .....lb	.03½	:	.04
Neutral, bbls NY .....lb	.07½	:	.12
Moellon, bbls., NY .....gal	...	:	.50
Greases choice white bbls NY...lb.	...	:	.10¼
Yellow. .....lb	...	:	.07¼
House. .....lb	...	:	.07
Brown. .....lb	...	:	.06⅝
Herring, Tanks, Coast .....gal	nom.	:	nom.
Horse, 375 lb bbls NY .....lb	.10	:	nom.
Lard, prime steam bbls .....lb	.13¾	:	.14
Compounds, bbls .....lb	.13¾	:	.14
LARD OIL, edible prime.....lb	...	:	.15¼
Off prime bbls .....lb	...	:	.13¾
Extra bbls .....lb	...	:	.12¾
Extra, No. 1 bbls.....lb	...	:	.11½
No. 1 bbls .....lb	...	:	.11
No. 2 bbls .....lb	...	:	.10¾
LINSEED raw c-l bbls spot....lb	...	:	10.5
Five bbls raw.....lb	...	:	10.8
Tanks, raw .....lb	...	:	9.9
Bld., 5bbl lot wks.....lb	...	:	11.1
Dbl boiled 5 bbl.....lb	...	:	11.2
Mar.-May c-l wks....lb	...	:	10.5
Menhaden, crude tanks Balt ..gal	...	:	.47½
Light pressed, bbls NY .....gal	.65	:	.67
Yellow bleached bbls NY ....gal	.68	:	.70
Extra bleached bbls NY .....gal	.70	:	.72
Blown bbls NY .....lb	...	:	.10
Mineral Oil, white, 50gal bbls gal	.80	:	.90
Russian gal .....gal	.95	:	1.00
Neatsfoot 20° ct., bbls NY.....lb	...	:	.15¾
Pure bbls NY .....lb	...	:	.12¾
CP bbls NY .....lb	...	:	.15¾
Extra bbls NY.....lb	...	:	.11¼
No. 1 bbls NY.....lb	...	:	.11
Oleo Oil, No. 1, bbls NY.....lb	...	:	.12½
No. 2, bbls NY.....lb	...	:	.09½
No. 3, bbls NY.....lb	...	:	.09
OLIVE, denatured bbls NY.....gal	1.58	:	1.60
Edible, bbls NY.....gal	...	:	2.15
Foots bbls NY.....lb	.09½	:	.09¾
Shipments. .....lb	.09	:	.09¼
Palm Lagoe, 1,500 lb casks....lb	.08¾	:	.09
Niger casks .....lb	.08	:	.08¼
Bonny Old Calabar casks lb	...	:	nom.
Palm Kernel bbl NY.....lb	.09½	:	.09¾
Casks .....lb	.08	:	.09⅛
Peanut refined bbls NY.....lb	.15½	:	.16
Crude, mills buyers' tks .....lb	.10	:	.10¼
Crude, bbls NY .....lb	.12	:	.12¼
Perilla, bbls NY .....lb	.12½	:	.13
Tanks, Coast .....lb	.10¼	:	.10½
Poppyseed, bbls NY.....gal	1.70	:	1.75
Rapeseed bbls NY Japanese.....gal	.83	:	.86
English. .....gal	.90	:	.93
Blown bbls NY.....gal	1.05	:	1.07
Red Oil, distilled bbls.....lb	.09½	:	.10
Tanks. .....lb	...	:	.08½
Saponified bbls .....lb	.10	:	.10½
Tanks. .....lb	...	:	.08¾
Salmon, 8,000 gal tks Coast....gal	.50	:	nom.
Sardine, Tanks Pacific Coast..gal	...	:	.45
Sesame edible yellow bbls.....lb	.12¼	:	.13
White .....lb	.14	:	.15
Sod Oil, bbls NY .....gal	...	:	.40
SOYA BEAN, crude tks Pac Cst..lb	.09½	:	.09¾
Crude, tks NY .....lb	.10¼	:	.10½
Crude, bbls., NY .....lb	.12	:	.12¼
Refined bbls NY .....lb	...	:	.13
Sperm. 38° ct., blchd. bbls NY gal	.85	:	.86
45° cold test blchd bbls NY gal	.82	:	.84
STEARIC ACID,			
Double pressed, bags dist.....lb	.11¾	:	.12
Double pressed, bgs saponified lb	.12	:	.12¼
Carlots. .....lb	...	:	.11½
Triple pressed bgs dist.....lb	.13¾	:	.14
Carlots. .....lb	...	:	.13½
Stearine Oleo bbls .....lb	.10⅝	:	.10¾
Tallow edible tierces .....lb	...	:	.10
Ciby, Extra loose .....lb.	...	:	.07¾
Tallow Oil, acidless tks NY.....lb	...	:	.09¼
Bbls c-l NY.....lb	...	:	.11
Whale, nat winter bbls NY ....gal	.76	:	.78
Blchd, winter bbls NY .....gal	.78	:	.80
Extra blchd bbls NY .....gal	.80	:	.82
Yolk Oil, bbls .....lb			
Turkey Red, Oil, single bbls ..lb	.11	:	.12
Double .....lb	.14	:	.16

9½c lb with parcels to arrive at 9⅝c lb and March shipment at 9c lb openly quoted. Demand is good and the market steady at these levels.

Perilla Oil—Tanks on the Coast have reacted upward again and inside prices are now quoted at 10¼c lb. Spot oil in barrels is unchanged at 12½c@13c lb.

Rapeseed Oil—Following the advances in all grades the market is quiet as to price movement although sellers are experiencing a good inquiry. Current quotations are: 83c@86c gal. for Japanese; 90c@93c gal. for English; and $1.05 @$1.07 lb for blown.

Red Oil—There is a good sale for all grades in this territory with most producers sold up for March at 8½c @8¾c lb for distilled in tanks and 8¾c@9c lb for saponified in tanks.

Soya Bean Oil—The market here is routine at the moment with no price changes heard on any position.

Stearic Acid—Sales are being made in good volume this week at 11½c@11¾c lb for double pressed in carlots and 13½c@13¾c lb for triple pressed.

Stearine Oleo—Spot is quoted lower this week at 10⅝c lb on a quiet market.

Tallow—City extra is a shade higher this week at 7¼c with consumers inquiring in good volume.

INDUSTRIAL RAW MATERIAL

Albumen—The consuming demand for edible egg has slackened and spot goods are offered now at 88c@91c lb. as to seller. Most sizeable buyers are fairly well taken care of now. Blood albumen moves in average quantities at 45c@55c lb. as to quantity. Latest reports on the movement of vegetable have shown no change.

Blood—There seems a shortage of stocks in New York and vicinity despite the small demand and holders are asking $4.50 unit. Actual business could probably be done at $4.35 unit. The pinch for stocks at Chicago is less pronounced and the market there lower at $4.75 unit. South American is offered at $4.00 unit.

Bone Meal—Has been rather quiet in all sections for the past ten days. Offerings of imported are heard at $28.50@$29.00 ton with domestic slightly higher.

Industrial Raw Materials

Albumen, egg edible .....lb	.88	:	.90
Tech., 100 lb drs..lb	.80	:	.83
Blood, 225 lb bbls .....lb	.45	:	.55
Vegetable edible .....lb	.60	:	.65
Technical .....lb	.50	:	.55
Annatto, fine .....lb	.41	:	.48
Archil., double 600 lb bbls ....lb	.13	:	.14
Triple, 600 lb bbls .....lb	.16	:	.17
Cone, 600 lb bbls .....lb	.18	:	.20
Asbestine c-l wks .....ton	...	:	14.75
lc-l wks .....ton	...	:	18.00
Bees Wax, white cases .....lb	.58	:	.60
Yellow, refined cases .....lb	.46	:	.48
Crude, bags .....lb	.40	:	.41
Commercial cs, ...lb	.27	:	.28
Blood dried fob NY.....unit	...	:	4.35
Chicago. .....unit	...	:	4.75
S Am Shipment .....unit	...	:	4.00
Bone Raw, Chicago .....ton	29.50	:	30.00
Bone Meal, 3 & 50 imp.....ton	28.50	:	29.00
Bone Ash, 100 lb kegs .....lb	.06	:	.07
Black, 200 lb bbls lb	...	:	.08¼
Candelilla Wax, bags .....lb	.33	:	.35
Carnauba Wax, Flor., bags ....lb	.50	:	nom.
Powd .....lb	.50	:	nom.
No. 1, Yellow, bags.....lb	.60	:	.63
No. 2, regular bags.....lb	.53	:	.55
No. 2, N. Country bags .....lb	...	:	nom.
No. 3, N Country bags.....lb	.35	:	.37
No. 3, chalky bags .....lb	.38	:	.40
CHARCOAL			
Hardwood, lump, bulk wks ..bu	.18	:	.19
Wood, powd., 100 lb bbls ....lb	.04	:	.05
Willow, powd 100 lb wks bbls lb	.06	:	.06¼
Chestnut clarified 25% tks wks lb	.02	:	.02¼
Bbls, wks .....lb	.03	:	.03¼
Powd., 60% 100 lb bags wks lb	.05½	:	.05¾
Decolorized bags wks .....lb	.06½	:	.07
Cudbear, English .....lb	.17	:	.18
Cutch Rangoon 100 lb bales ....lb	...	:	.15
Tablets, 120 lb boxes ....lb	.13	:	.14
Borneo solid, 100 lb bales ..lb	.05½	:	.05¾
Cyanamide, bulk, c-l wks Amm unit	1.82½	:	1.90
Imp. .....Amm. unit	1.80	:	1.85
Dextrin, white corn 140 lb bags c-l .....100 lb	...	:	3.87
bags c-l .....100 lb	...	:	3.97
Canary .....100 lb	...	:	3.92
bags lc-l .....100 lb	...	:	4.02
Potato, white 220 lb bags lc-l lb	...	:	.08½
Yellow, 220 lb bags ..lb	...	:	.08½
Tapioca, 200 lb bags lc-l ..lb	.08	:	.08¼
Divi Divi Extract .....lb	.04	:	nom.
Pods, bags ship .....ton	47.00	:	47.50
EARTH Diatomaceous see Kieselguhr			
Egg Yolk, 200 lb cs.....lb	.82	:	.84
Ester Gums Dark, 280 lb bbls ..lb	.13¾	:	.14
Light, 280 lb bbls .....lb	.14	:	.14¼
Fish Scrap, dried wks.....unit	4.50	&	.10
Acid Bulk 7 & 3½ Deliv			
Norfolk & Balt basis....unit	...	:	nom.
Flavine Lemon 55 lb cs .....N lb	.90	:	.95
Orange 70 lb cs .....lb	.85	:	.90
Fossil Flour .....lb	.02½	:	.04
Fustic, solid 50 lb boxes .....lb	.20	:	.23
Crystals, 100 lb boxes .....lb	.20	:	.22
Liquid, 51° 600 lb bbls ....lb	.09	:	.10
Fustic, sticks .....ton	30.00	:	32.00
Chips .....lb	.04	:	.05
Gall extract .....lb	.20	:	.21
Gambier 25% liq.,450 lb bbls lb	.12	:	.14
Common 200 lb cases .....lb	.08	:	.09
Singapore cubes, 150 lb bags lb	...	:	.23
Gelatin Technical 100 lb cs ... lb	.45	:	.50
Glucose (Grape Sugar) dry 70° bags c-l NY .....100 lb	3.14	:	3.24
80° bags c-l NY .....100 lb	3.24	:	3.34
Tanners' Spcl 100 lb bgs 100 lb	...	:	3.14
GLUE, pure white bbls .....lb	.22	:	.26
Medium white, bbls .....lb	.20	:	.24
French bbls .....lb	.18	:	.25
High Grade, bbls .....lb	.35	:	.40
Bone, regular, bbls .....lb	.10	:	.12
Fish bbls .....gal	1.50	:	1.75
Hide bbls .....lb	.14	:	.24

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Industrial Raw Materials

Osage Orange
Whiting

GUM, Accroides, Red, coarse and fine, 140-150 lb bags	lb	.03¾	.04½
Powdered, 150 lb bgs	lb	.06	.06½
Accroides, Yel. 150-200 lb bgs	lb	.18	.20
Animi (Zanzibar) Bean and pea 250 lb cases	lb	.40	.45
Glassy, 250 lb cases	lb	.60	.65
Asphaltum, Barbadoes, Manjak 200 lb bags	lb	.09	.12
Egyptian, 200 lb cases	lb	.15	.17
Gilsonite selects 150 lb bgs	ton	55.00	60.00
Benzoin, Sumatra, Tech., 120 lb cases	lb	.30	.32
Copal, Congo, 112 lb bags Water White,	lb	.35	.36
Light Amber,	lb	.12½	.14
Dark Amber,	lb	.08¾	.09
Clean Opaque	lb	.12	.13
Copal, East Indian 224 lb cases 180 lb bags— Pale, E. I. Bold	lb	.17	.17½
Pale, E, I, Chips	lb	.07½	.08
180 lb bags— Copal, Manila, 180-190 lb Baskets— Pale Bold, Loba A.	lb	.16	.16½
Pale Bold, Nubs, Loba B	lb	.15	.15½
Pale, Bold, Loba C	lb	.14½	.15
Pale Nubs, P. N.	lb	.14	.14½
Pale Bold, 224 lb cases	lb	.16	.18
Copal, Pontianak, 24 lb cases— Pale, Bold, genuine No. 1	lb	.28	.28½
Pale, genuine split chips	lb	.19	.19½
Damar, Batavia standard 136 lb cases	lb	.25½	.26
Batavia E Seeds 136 lb cs	lb	.18½	.19
Batavia F Splinters 136 lb cases and bags	lb	.12	.13
Batavia, Dust, 160 lb bags	lb	.10½	.11½
Singapore No. 1 224 lb cs	lb	.34	.36
Singapore No. 2, 224 lb cs	lb	.22½	.22½
Singapore No. 3, 180 lb bgs	lb	.11	.11½
Elemi, No. 1, 80-85 lb cs	lb	.14	.15
No. 2, 80-85 lb cases	lb	.13	.14
No. 3, 80-85 lb cases	lb	.11	.13
Kauri No. 1, 224-226 lb cs	lb	.67½	.68
No. 2, fair pale 224-226 lb cases	lb	.44½	.45
Bush Chips 224 - 226 lb cases	lb	.42	.43
Pale Chips 224-226 lb cases	lb	.24½	.26
Brown Chips 180-200 lb bgs	lb	.14½	.16
Sandarac Prime quality 220 lb bags and 300 lb casks	lb	.26	.27
Graphite crude 220 lb bags	ton	15.00	35.00
Flake, 500 lb bbls	lb	.05	.09
HEMATINE, Paste, 500 lb bbls	lb	.09	.12
Crystals, 400 lb bbls		.12	.20
Hemlock, 25% 600 lb bbls wks	lb	.03½	.03¾
Bark	ton	...	16.00
Hypernic, 51° 600 lb bbls	lb	.12	.15
Indigo Madras bbls	lb	1.28	1.30
20% paste drums	lb	.14	.15
Japan Wax 224 lb cs	lb	.18½	.19
KIESELGUHA, 95 lb bags NY	ton	60.00	70.00
Larch 25% 600 lb bbls wks	lb	.03¾	.04
Powd., 100 lb bags wks	lb	.08	.09
Logwood 51° 600 lb bbls	lb	.08¼	.08½
Lower grades	lb	.07½	.08
Solid, 50 lb boxes	lb	.12	.15
LOGWOOD sticks	ton	26.00	27.00
Chips 150 lb bags	lb	.03	.03½
Madder, Dutch	lb	...	.30
Mangrove, 55% 400 lb bbls	lb	.03½	nom.
Mangrove bark, African	ton	37.00	38.00
Marble Flour, bulk	ton	10.00	12.00
See also Calcium Carbonate under Chemicals			
Montan Wax, crude bags	lb	.06½	.07
Bleached bags	lb	.24	.27
Myrobalans 25% liquid bbls	lb	.04	.04¼
50% solid, 50 lb boxes	lb	.08	.08¼
Myrobalans, bags J1	ton	41.00	42.00
B2.	ton	...	nom.
J2.	ton	23.50	34.00
Nitrogenous Material bulk	unit	...	3.60
NUTGALLS, Chinese, bags	lb	.17	.18
Aleppy bags	lb	.25	nom.
Powd. bags	lb	.22	.24
Oak bark, whole	ton	20.00	23.00
Ground	ton	45.00	50.00
Oak, tanks wks	lb	...	.03½
23-25% liq. 600 lb bbls wks	lb	.04	.04½
Solid, powd	lb	.07½	.08

Carnauba Wax—On spot the market reflects the steady position of the primary market and sellers are holding firm at 60c@62c lb. for No. yellow and 53c@55c lb. for No. 2 regular. Neither of these grades are in good supply here. The lower grades are in average supply and moving at an average gait.

Chestnut Extract—Extract makers are very firm in their ideas of price and 25% material is held at 2c lb. in tanks at the mills in all directions. Shortage of raw materials augurs for at least a maintenance of this market. Powdered 60% is unchanged from previous quotations.

Divi Divi—Unchanged this week following the advance early last week to $47.00 ton on an advance in the primary market. As with all tanning materials interest is good and the market firm.

Egg Yolk—No relief from the present tight position is looked for at present and importers are offering in 1 and 2 case lots at 83c@85c lb. The primary market position is unchanged.

Japan Wax—Again a bit easier this week with sales made early in the week at 18½c@19c lb. on spot and offers from primary sources heard at 17¼c lb. Consuming interest is fair.

Myrobalans—Continue very firm for shipment with J2's offered at $33.50 ton and J1's at $41.00 ton. R2's are still not quoted and are believed to be unobtainable.

Rosins—Sharply lower on spot for almost all grades, based on the weak position of the primary market. The mild weather in the South has advanced the producing season and the break in the market occurred sooner than expected. Consumers are holding off awaiting developments. Current quotations are B, $10.25; D, $10.35; E, $10.75; F, $11.00; G, $11.25; H, $11.50; I, $11.75; K, $12.75; M, $13.00; N, $13.50; WG, $13.75 and WW, $17.00.

Tankage—On the small production at present, sellers have increased their spot asking price to $4.25 and 10c unit, though little is done at this level. South American is unchanged at $4.00 and 10c unit.

Turpentine—The local market continues to jump around and is this week lower again at 71¼c@77c gal. on spot. Sellers have been holding up the market well but inquiry is still light in all quarters.

Osage Orange 51° liquid	lb.	.07	.07½
Powd, 100 lb bags	lb.	.14½	.15
Crystals	lb.	.16	.17
Paracoumarone, 230 lb. drums	lb.	.12	.15
Paraffin, ref'd. 200 lb. cs slabs 118-120 deg. M.P.	lb.	.08	.09
123-127 deg. M.P.	lb.	.08½	.08¾
128-132 deg. M.P.	lb.	.07½	.07¾
133-137 deg. M.P.	lb.	.08	.08½
138-140 deg. M.P.	lb.	.08¾	.10
Phosphate Acid, 16% Bulk wks	unit	.62½	.65
Phosphate Rock, fob., mines Florida Pebble 68%	ton.	3.00	3.25
Florida Pebble 70%	ton	3.50	3.65
Florida Pebble 72%	ton	3.85	4.00
Florida Pebble, basis 75%-74%	...		5.35
Florida Pebble, 75%	...		5.60
Florida Pebble, basis 77%-76%	...		6.00
Tennessee, 72%	ton.	...	5.50
Pine Oil, stm., dist. bbls	gal.	...	.66
Destructive dist.	lb.	.63	.64
Prime	bbl.	8.00	10.60
Plaster Paris, tech., 250 lb bbls	bbl.	...	3.30
Pumice Stone, lump, 250 lb bbls	lb.	.04½	.06
Lump, bags	lb.	.04	.05
Powdered, 350 lb bbls	lb.	.02½	.03
QUEBRACHO, 35% liquid tks	lb.	.03	.03½
450 lb bbls c-l		.03½	.04
35% bleaching, 450 lb bbls	lb.	.04	.05
Solid 63% 100 lb. bales clf.	lb.	.04¾	.04¾
Clarified, 64% bales	lb.	...	.05
Quercitron, 51° 450 lb bbls	lb.	.06½	.07
Solid, 100 lb. boxes	lb.	.10	.13
Quercitron, bark, rough	ton.	...	14.00
Ground	ton	34.00	35.00
Rosins, (Solid in 600 lb bbls gross for net) B, ...10.25 D, ...10.25 E, ...10.75 F, ...11.00 G, ...11.25 H, ...11.50 I, ... K, ... M, ... N ..... WG, ... WW, ...			11.75 12.75 13.00 13.50 13.75 17.00
(Sold in 600 lb bbls net, quotations based on a unit of 280 lb)			
Rosin Oil first run 50 gal bbls	gal	...	.67
Second run bbls	gal	...	.72
Rotten Stone lump imp. bbls	lb.	.07	.08
Lump selected, bbls	lb.	.09	.12
Powdered, bbls	lb.	.02	.05
Domestic bags mines		24.00	30.00
Sago Flour 150 lb bags	lb.	.04¼	.05
Shellac, T.N., bags	lb	.46	.47
Superfine bags	lb	.50	.51
Garnet, bags	lb	.45	.46
Bone dry, bags	lb	.55	.56
Spruce, 25% liquid tanks, wks	lb.	.01	.01½
bbls	lb.	...	.01¾
Powd, 50% 100 lb bags wks	lb.	.02	.02¼
Starch, rice, 140 lb bags	lb.	.09	.10
Powd. 140 bgs. c-l	100 lb	...	3.22
Bags lc-l	100 lb	...	3.32
Pearl, 140 lb bags	100 lb	...	3.12
Bags lc-l	10 lb	...	3.22
Potato domestic, 200 lb bgs c-l	lb.	.04¾	.05
Imported bags duty paid	lb	.06¼	.06½
Wheat, dom., thick bags	lb.	.06½	.07
Thin, bgs	lb.	.09½	.10
Sol. Potato	lb.	.06	.06½
Sumac, extract, liq 450 lb bbls	lb.	.05	.06
CP., 450 lb bbls	lb.	...	.10¼
Stainless, 600 lb bbls	lb.	.11	.11½
Sumac, Sicily leaves 100 lb bags	ton	130.00	nom
Ground shipment	ton	76.00	78.00
Virginia, 150 lb bags	ton.	55.00	60.00
TALC, Italian 220 lb bags NY	ton.	40.00	50.00
Refined, white bags	ton.	50.00	55.00
French, 220 lb bgs NY	ton.	30.00	35.00
Refined, white bags	ton.	38.00	45.00
Dom., crude, 100 lb. bags NY	ton.	12.00	15.00
Refined 160 lb bags NY	ton.	16.00	18.00
Tankage, ground NY	unit	4.25 &	.10
High grade fob Chicago	unit	4.50 &	.10
So. Am. cif	unit	4.00 &	.10
Tapioca Flour, high grade bgs	lb	.04¼	.04½
Medium grade, bgs	lb	.03½	.03¾
Low grade, bags	lb.	.03	.03¼
Tar, Kiln-burnt	bbl.	...	16.00
Retort bbls	bbl	16.00	18.00
Tripoli, 500 lb. bbls	100 lb.	2.50	3.00
Turpentine Spirits, bbls	gal	.78	.83
Wood steam Dist. bbls	gal	.66	.73
Valonia Cups 30-31% tan	ton	39.00	40.00
Beard, 42% tan bags	ton	58.00	59.00
Mixture Bark bags	ton	43.00	44.00
Wattle Bark, bags	ton	50.00	51.50
Extract 55% dble bgs ex-dock	lb.	...	.05¾
Whiting 200 lb bags c-l wks 100 lb.		...	1.25
Alba bags NY c-l	ton.	...	13.00
Gilders, bags NY c-l	100 lb.	...	1.35

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ALACOL—31 cs., The Wonder Co., Rotterdam

ALBUMEN—Blood, 10 cks., Pfaltz & Bauer, Hamburg; 11 cs., W. E. Ross & Bro., Hamburg

AMMONIUM—Carbonate, 39 pgs., Standard Bank So. Africa, Liverpool; **Chloride,** 70 cks., Monmouth Chem. Co., Rotterdam; 80 bbls., Monmouth Chem. Co., Hamburg; 380 bbls., Superfos Co., Hamburg; **Nitrate,** 566 cks., R. W. Greeff & Co., Brevik; 89 cs., R. W. Greeff & Co., Oslo; 231 cks., R. W. Greeff & Co., Oslo

ANTIMONY—100 bgs., C. Hardy, Hankow; 88 cs., Nat. City Bk., Havre; **Regulus,** 250 cs., F. W. Frost Co., Hankow; 250 cs., Order, Hankow; 250 cs., W. R. Grace & Co., Hankow

ARSENIC—25 drs., Pfaltz & Bauer, Hamburg

BARIUM—Chloride, 6 cks., Pfaltz & Bauer, Rotterdam

BARYTES—30 bbls., A. Hurst & Co., Hamburg

BROWNSTONE—1 cs., Superfos Co., Hamburg

BUTYL ACETATE—1 bbl., Order, Hamburg

CARBON—4 bbls., C. Pfizer & Co., Rotterdam; 666 bgs., Glidden Food Products Co., Rotterdam

CASEIN—1,252 bgs., Kalbfleisch Corp., Buenos Aires

CHALK—500 tons, Baring Bros. & Co., London; 1,700 bgs., Nat. City Bank, Antwerp; 30 bgs., Penn R. R. Co., Southampton; 33 cs., Brunswick-Balke-Collender Co., Havre; 350 cs., Order, Antwerp

CHEMICALS—117 cks., H. Hinrichs, Rotterdam; 43 cks., General Dyestuff Corp., Rotterdam; 53 cks., Th. Goldschmidt, Rotterdam; 52 pgs., Order, Rotterdam; 1,058 Order, Havre; 10 cs., E. M. Sergeant Co., Hamburg; 1 cs., P. H. Petry & Co., Hamburg; 7 cs., J. L. Hopkins & Co., Hamburg; 22 cs., Hoffman-La Roche Co., Hamburg; 60 bbls., 1 cs., Mallinckrodt Chem. Works, Hamburg; 138 bgs., A. Klipstein & Co., Hamburg; 65 bbls., 36 cks., Roessler & Hasslacher Chem. Works, Hamburg; 250 bgs., Monmouth Chem. Co., Hamburg; 170 cks., Jungmann & Co., Hamburg; 12 cs., 15 cks., 33 drs., Pfaltz & Bauer, Hamburg; 75 bbls., W. A. Foster & Co., Hamburg; 4 cs., Eissing Syndicate, Hamburg; 40 drs., Roessler & Hasslacher Chem. Co., Hamburg; 30 bbls., American Express Co., Liverpool

COAL TAR DISTILLATES—2 cks., 8 cs., General Dyestuff Corp., Hamburg; 71 drs., Order, Liverpool; 69 drs., Tar Acid Refining Corp., Liverpool

COAL TAR PRODUCTS—59 cks., 2 cs., General Dyestuff Corp., Rotterdam

COCHINEAL—21 bgs., American Trdg. Co., Liverpool

COLORS—2 cs., D. D. Williamson & Co., Bremen; 14 cks., M. J. Corbett & Co., Rotterdam; 1 bbl., American Exchange Irving Trust Co., Rotterdam; 4 cs., International General Elec. Co., Rotterdam; **Alizarine,** 5 cks., 16 jugs, General Dyestuff Co., Rotterdam; 27 cks., Grasselli Dyestuff Co., Rotterdam; 9 cks., General Dyestuff Co., Rotterdam **Aniline,** 25 cks., Geigy Co., Havre; 4 cks., Carbic Color & Chem. Co., Havre; 12 cks., American Exchange Pacific Bank, Havre; 38 pgs., Sandoz Chem. Works, Havre; **Bronze,** 16 cs., Massee & Co., Bremen; 6 cs., L. Uhlfelder & Co., Bremen; Bremen; 19 cs., B. F. Drakenfeld & Co., 10 cs., Diamond Decor. Leaf Co., Antwerp; 27 cs., Baer Bros., Hamburg; 35 cs., 5 bbls., T. Reisner, Inc., Hamburg; **Coal Tar,** 16 cks., 1 cs., General Dyestuff Co., Rotterdam; **Earth,** 37 cks., T. Lee Smith & Co., Bremen; 8 cks., B. F. Drakenfeld, Liverpool; **Indigo,** 4 cks., General Dyestuff Co., Rotterdam; **Intermediates,** 12 cks., General Dyestuff Co., Rotterdam

COMEDOL—2 cs., Diener, Blank & Co., Hamburg

CRYOLITHE—100 bgs., Jungmann & Co., Hamburg

CUDBEAR—1 cs., W. Schall & Co., Liverpool

DIVI DIVI—1,102 bgs., Suzarte & Whitney, Maracaibo

EPSOM SALTS—350 bbls., H. Hinrichs Hamburg, 1,000 bgs., C. Tennant & Sons, Bremen

ETHYL CHLORIDE—7 cs., Hensel, Bruckmann & Lorbachers, Hamburg

EXTRACTS—3 cs., G. Miller, Havre; **Beef,** 12 pkgs., Wilson Co., Buenos Aires; 225 cs., Armour Co., Buenos Aires; 268 cs., Swift Co., Buenos Aires; **Fish Oil,** 5 bbls., Superfos Co., Hamburg; **Mangrove Bark,** 750 bgs., Order, Manila; **Quebracho,** 8,350 bgs., International Pdts. Co., Buenos Aires

FERTILIZER—3,629 bgs., Kuttroff, Pickhardt & Co., Hamburg

GAMBIER—425 cs., E. E. Androvette, Singapore; 600 cs., L. Littlejohn & Co., Singapore

GELATINE—25 cs., W. E. Miller, Havre

GLAUBER SALTS—125 bbls., Monmouth Chem. Co., Hamburg; 50 cks., Monmouth Chem. Co., Hamburg

GLUE—63 cks., W. E. Miller, Antwerp; 40 bbls., Gallagher & Ascher, Liverpool; 200 bgs., National Gum & Mica Co., Liverpool; 150 bgs., Kelsey, Risden Co., Liverpool; 8 drs., L. W. Ferdinand & Co., London; 255 bgs., J. J. Shore & Co., London; 40 bgs., W. E. Miller, Antwerp; 350 cs., Order, Constanza

GLYCERINE—40 drs., Parsons & Petit, Rotterdam; 25 drs., Marx & Rawolle, Liverpool

GUAJACOL—2 cs., Heyden Chem. Corp., Hamburg

GUMS—6 cs., American Express Co., Havre; **Benzoin,** 6 cs., A. Chiris Co., Marseilles; **Copal,** 441 bkts., S. Winterbourne, Semerang; 75 bkts., American Exchange Pacific Bank, Macassar; 295 bkts., Kidder, Peabody Acceptance Corp., Macassar; 71 bgs., Sino Java Handel, Macassar; 192 bgs., Brown Bros. & Co., Singapore; 150 bgs., Innes & Co., Singapore; 64 bgs., L. C. Gillespie & Co., Singapore; 87 bkts., Nat. City Bank, Macassar; 104 bkts., Gravenhorst & Co., Semerang; 74 bkts., 155 bgs., Innes & Co., Semerang; 100 sks., W. H. Scheel, Manila; 140 bgs., Order, Singapore; 79 bgs., J. D. Lewis, Antwerp; 100 bgs., Grace Nat'l Bk., Antwerp; 280 bgs., Chem. Nat'l Bk., Antwerp; 279 bgs., Order, Antwerp; **Damar,** 100 bgs., A. Klipstein & Co., Batavia; 200 bgs., L. C. Gillespie & Sons, Batavia; 150 bgs., Jaeger Co., Singapore; 100 cs., Brown Bros. & Co., Singapore; 50 cs., L. C. Gillespie & Sons, Singapore; 150 bgs., France, Campbell & Darling, Singapore; 100 cs., W. H. Scheel, Batavia; 200 cs., G. W. S. Patterson Co., Batavia; 50 cs., Sino Java Handel, Batavia; 50 cs., Stroock Wittenberg Co., Batavia; 100 cs., L. C. Gillespie & Sons, Batavia; 326 bkts., L. C. Gillespie & Sons, Macassar; 100 cs., Innes & Co., Batavia; 100 cs., Kidder, Peabody Acceptance Corp., Batavia; 100 cs., Innes & Co., Batavia; 100 cs., Guaranty Trust Co., Singapore, 250 bgs., Baring Bros & Co., Singapore; 100 bgs., Innes & Co., Singapore; 50 bgs., 50 cs., France, Campbell & Darling, Singapore; 50 cs., Order, Singapore; 100 cs., L. C. Gillespie & Son, Manila; **Karaya,** 268 bgs., Order, Bombay; **Shiraz,** 89 bgs., Order, London; 124 bgs., Order, Bombay; **Tragacanth,** 244 bgs., 63 cs., Order, Bombay

HARTSHORN SALTS—35 cks., Order, Rotterdam

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IRON OXIDE—55 kgs., J. H. Rhodes & Co., Liverpool; 19 cks., Wishnick-Tumpeer Chem. Co., Liverpool; 21 cks., Reichard Coulston, Inc., Liverpool

IRON—Sulfate, 10 cs., 1 ck., C. B. Richard & Co., Hamburg

KAINIT—200 bgs., Potash Imptg. Corp., Hamburg

KAPOC—1,202 bls., American Seagrass Co., Sourabaya; 260 bls., Bank of America, Batavia; 200 bls., Boston Excelsior Co., Sourabaya; 390 bls., Boston Excelsior Co., Sourabaya; 100 bls., Boston Excelsior Co., Sourabaya; 150 bls., A. S. Cookman & Co., Sourabaya; 150 bls., L. E. Ellis & Co., Sourabaya; 100 bls., W. R. Grace & Co., Sourabaya; 450 bls., Burton Dixie Corp., Sourabaya; 178 bls., Order, Sourabaya; 451 bls., American Seagrass Co., Semerang; 326 bls., Boston Excelsior Co., Semerang; 243 bls., Order, Semerang

LIME—Chlorinated, 50 cs., H. Kohnstamm, Liverpool

LIME NITRATE—71 cks., R. W. Greeff & Co., Brevik

LITHOPONE—600 cks., B. Moore & Co., Rotterdam

MAGNESIA—Carbonate, 5 cks., 5 cs., Schofield-Donald Co., Liverpool

MAGNESITE—Caustic Calcined, 60 bbls., 600 bgs., Innis, Speiden & Co., Rotterdam

MAGNESIUM — Carbonate, 280 bgs., E. M. Sergeant & Co., Glasgow; **Chloride,** 167 drs., Order, Hamburg

MANGANESE METAL—120 bbls., De Courcy Browne, Inc., Liverpool; **Ore,** 41 sks., Grasselli Chem. Co., Kingston; 350 bgs., Hanover Nat. Bank, Kingston

MYROBALANS—8,382 bgs., Order, Bombay; 2,000 pkts., Order, Calcutta

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OILS—Coconut, 870 tons, Philippine Ref. Co., Manila; 860 tons, Copra Milling Corp., Manila; 851 tons, Spencer Kellogg & Sons, Manila; 423 tons, American Linseed Co., Manila; **Cod,** 200 cks., J. D. Irwin & Co., St. Johns; 62 cks., R. Badcock & Co., St. Johns; 50 cks., Order, Bergen; **Cod Liver,** 360 bbls., E. R. Squibb & Sons, St. Johnh; 2 cs., Findley Lake Silver Fox Co., St. Johns; 200 bbls., Nat. City Bank, Bergen; 100 bbls., Harris Lab., Bergen; 300 cks., National Oil Products Co., Bergen; 50 bbls., E. M. Javitz & Son, Bergen; 250 bbls., P. R. Dreyer Co., Bergen; 100 bbls., Burroughs-Wellcome Co., Bergen; 160 bbls., Order, Bergen; 14 drs., R. F. Downing & Co., Copenhagen; 100 bbls., Fischer, Hollinshed Co., Oslo; 101 bbls., Order, Oslo; 2 bbls., H. J. Baker & Bros., Bergen; 1 bbl., W. Benkert & Co., Bergen; 40 bbls., Order, Bergen; **Haarlem** 10 cs., W. Van Doorn & Co., Rotterdam; **Mineral,** 125 drs., Order, Hamburg; 100 drs., Schliemann Co., Hamburg; **Olive,** 160 cs., Nicelle Olive Oil Co., Nice; 375 bbls., Order, Nice; 100 bbls., W. Schall & Co., Piraeus; 700 bbls., Seaboard Nat. Bank, Piraeus; **Palm,** 157 drs., D. Bacon, Liverpool; 40 cks., African & Eastern Trdg. Corp., Hamburg; 12 cks., African & Eastern Trdg. Corp., Hamburg; 150 bbls., France, Campbell & Darling, Port Swettenham; **Sesame,** 200 bbls., Fischer, Hollinshed, Inc., Hamburg; **Sulphur,** 200 bbls., Smith Oil Co., Piraeus; 200 bbls., Bank of Manhattan Co., Piraeus; 200 bbls., J. B. Dewsnap & Co., Patras; 150 bbls., H. W. Peabody & Co., Patras; **Wood,** 200 drs., Spencer Kellogg & Sons, Shanghai; 150 drs., Paterson, Boardman & Knapp, Shanghai; 50 drs., De Sousa & Co., Hongkong; 700 drs., W. R. Grace Co., Hongkong

PHOSGENE—40 bottles, Schenkers, Inc., Hamburg

PHOSPHATE—Disodium, 270 cks., Rhodia Chem. Co., Rotterdam

PHOSPHOR—448 cs., W. E. Miller, Havre

PIASAVA—232 bls., African & Eastern Trdg. Corp., Calabar; 20 bls., Eaton Schleich, Antwerp

PITCH—20 cs., A. Gusmer, Inc., Hamburg

PLUMBAGO—666 bgs., 181 bbls., Order, Colombo

POTASSIUM SALTS—55 bbls., Roessler & Hasslacher Chem. Co., Hamburg; 240 cks., Kuttroff, Pickhardt & Co., Hamburg; 250 cks., 14 bgs., A. Klipstein & Co., Hamburg;

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QUICKSILVER—1 tube, American Shpg. Co., Oslo; 12 flasks, Haas Bros., Tampico

ROSIN—20 cs., Magnus, Mabee & Reynard, Hamburg; 25 cs., G. H. Lincks, Hamburg

SALT—280 sks., W. A. Hazard & Co., Liverpool

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SHELLAC—2 cs., A. Hurst & Co., Hamburg; 66 bgs., A. Hurst & Co., Hamburg

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SODIUM SALTS—Acetate Anhydrous, 127 drs., Grasselli Dyestuff Co., Rotterdam; **Arsenate,** 18 cks., Eissing Syndicates, Rotterdam; **Bicarbonate,** 100 bbls., Innis, Speiden & Co., Rotterdam; **Caustic,** 10 cs., Philipp Bros., Hamburg; **Cyanide,** 1 cs., C. R. Spence & Co., Hamburg; 50 drs., Order, Liverpool; **Hyposulfate,** 30 kegs, Yardley Co., Liverpool; **Nitrate,** 12,972 bgs., Wessel, Duval & Co., Antofagasta; 6,495 bgs., Anglo-So. American Trust Co., Antofagasta; 3,747 bgs., R. W. Greeff & Co., Brevik; 3,332 bgs., Anglo-So. American Trust Co., Iquique; 6,413 bgs., A. Gibbs & Co., Iquique; 13,214 bgs., Wessel, Duval & Co., Iquique; **Nitrite,** 4 cks., R. W. Greeff & Co., Oslo; **Phosphate,** 80 kegs, W. Benkert, Rotterdam; 1 bbl., H. Hinrichs, Hamburg; **Silico Fluoride,** 109 drs., Superfos Co., Copenhagen; **Sulfate,** 185 cks., Order, Rotterdam; **Sulphydrate,** 1,646 drs., Tibaze Artificial Silk Co., Rotterdam; **Uranate,** 30 cs., Luber Metal Corp., Antwerp

SOLACTOL—50 drs., Paterson, Boardman & Knapp, Hamburg

STARCH—50 bgs., Stein, Hall & Co., Copenhagen; **Potato,** 1,000 bgs., Stein, Hall & Co., Rotterdam; **Soluble,** 10 bls., Standard Chem. Products Co., Rotterdam

TAPIOCA—Flour, 575 bgs., French Kreme Co., Batavia; 337 bgs., Stein, Hall & Co., London; 326 bgs., Minute Tapica Co., London; 1,510 bgs., Stein, Hall & Co., London; 550 bgs., Catz American Co., Sourabaya; 1,000 bgs., Stein, Hall & Co., Batavia; **Pearl,** 458 bgs., Catz American Co., Batavia; **Siftings,** 58 bgs., Catz American Co., Batavia

TARTAR—915 bgs., Tartar Chem. Works, Buenos Aires; 200 bgs., Tartar Chem. Works, Marseilles; 500 bgs., C. Pfizer & Co., Marseilles; 160 bgs., Tartar Chem. Works, Lisbon

THIOCARBONATE CRYSTALS — 6 kegs, American Cyanamid Co., Liverpool

THIOUREA—6 kegs, American Cyanamid Co., Liverpool

TRIPHENYL—Phosphate, 12 drs., Kuttroff Pickhardt & Co., Hamburg

WAX—151 cs., Strohmeyer & Arpe, Lisbon; **Bees,** 69 bgs., American Trdg. Co., Rio de Janeiro; 7 bgs., Order, Rio de Janeiro; 3 bgs., W. Schall Co., Hunacao; 70 bls., Order, Rotterdam; 27 bgs., Order, Hamburg; 10 bgs., Order, Constantinople; **Carnauba,** 1/2 bgs., Pratt & Brake, Rio de Janeiro; 82 bgs., Royal Bank of Canada, Rio de Janeiro; **Minera',** 160 bgs., Schliemann Co., Hamburg; **Montan,** 269 bgs., Milligan & Higgins, Hamburg; 375 bgs., Strohmeyer & Arpe, Hamburg

WHITING—1,170 bgs., American Express Co., Dunkirk; 225 bgs., McMerun Co., Dunkirk

WOODFLOUR—6,925 bgs., B. L. Soberski, Oslo; 1,018 bgs., E. M. Sergeant & Co., Copenhagen

WOOL GREASE—25 bbls., Borne, Scrymser Co., Liverpool; 100 bbls., Kidder, Peabody Acceptance Corp., Bremen

ZYKLON—181 cs., Roessler & Hasslacher Chem. Co., Hamburg

ZINC—Ammonium Chloride, 87 bbls., A. Klinstein & Co., Antwerp

IMPORTS AT PHILADELPHIA
Feb. 23 to Mar. 2

ACID—Prussiac, 21 cs., Order, Liverpool

ALCOHOL—Menthol, 115 drs., Order, Rotterdam

ALLOY—Ferro, 788 bgs., Truempy, Faesy & Bosthoff, Genoa

BAUXITE—Crude, 2,258 tons, Republic Mining & Mfg. Co., Georgetown, Dem.

CHALK—500 tons, Brown Bros. & Co., London; **Block** 500 tons, Brown Bros. & Co., London

CHEMICALS—330 drs., Order, London; 20 cks., Roessler & Hasslacher Chem. Co., Rotterdam

CLAY—Blue, 336 tons, common, various consignees, Fowey; **China,** 3,509 tons, 5 cwt., various consignees, Fowey; **Sagger,** 00 tons, 8 cwt., various consignees, Fowey

COPAL—100 bgs., Brown Bros. & Co., Antwerp

DEXTRINE—50 bgs., Nat. Gum & Mica Co., Rotterdam

GYPSUM—2,000 tons, Phila-Girard Nat. Bank, Algiers

MANURE—Nitrogenous, 227 bgs., Order, Antwerp

MEAL—Bone, 551 bgs., Order, Rotterdam

MOLASSES—1,536,164 gals., Order, Boqueron & Cienfuegos; 6,593 tons, Eastern Alcohol Corp., Danzig; **Blackstrap,** 584,081 gals., North Am. Trading & Import. Co., Cienfuegos

MYROBALANS—4,257 pockets, Standard Bank of So. Africa, Ltd., Calcutta; 4,000 pockets, Order, Calcutta

OIL—Olive, 50 cs., Order, Genoa; **Sulfur,** 100 bbls., Order, Naples

ORE—Chrome, 5,350 tons, E. J. Lavino & Co., Beira; **Iron,** 4,500 tons, Phila-Girard Nat. Bank, Algiers; **Manganese,** 1,500 tons, E. J. Lavino & Co., Calcutta

OSSEINE—1,187 bgs., Order, Havre

OXIDE—Cobalt, 5 cs., E. S Neilson, Liverpool

PHOSPHATE—Precipitated Bone, 1,016 bgs., Order, Antwerp

SHELLAC—425 bgs., Order, Calcutta

SODIUM—Cyanide, 175 drs., Order, Liverpool; 90 drs., Order, Liverpool; **Prussiate,** 37 cks., Order, Liverpool; **Silico Fluoride,** 363 cks., Order, Copenhagen

TALC—250 bgs., Nat. City Bank, Genoa

WHITING—1,000 bgs., Order, Antwerp

IMPORTS AT WILMINGTON, N. C.
Feb. 25 to Mar. 3

POTASH—Kainit, 1,600 tons, Order, Robert, Hamburg; **Manure Salt, 20%,** 1,500 tons, Order, Robert, Hamburg; **Manure Salt, 30%,** 200 tons, Order, Robert, Hamburg; **Muriate,** 350 tons, Order, Robert, Hamburg

SODIUM—Nitrate, 2,000 tons, Order, Toluna, Chile

IMPORTS AT NEW ORLEANS
Feb. 25 to Mar. 4

BAUXITE—2,295 tons, Republic Mining Co. Georgetown

BENZINE—6,111 tons, N. O. Refining Co. Curacao

COPRA—1,637 tons, Order, Philippines

FERRO MANGANESE—60 tons, Order, Liverpool

MOLASSES—750,427 gals., Penick & Ford, Banes; 500,000 gals., Order, Port Tarafa

OCHRE—60 cks., Order, Havre

PEAT MULL—140 bales, Order, Bremen

SARSAPARILLA—8 bales, Order, Vera Cruz

IMPORTS AT BOSTON

GLAUBER SALTS—100 bbls., Brown Bros., Hamburg; 50 carboys, Brown Bros., Hamburg

MAGNESIUM—Chloride, 212 drs., Brown Bros., Hamburg

POTASH—Caustic, 70 drs., Superfos Co. Hamburg; 194 drs., Order, Hamburg, **Prussiate,** 60 cks., Order, Hamburg

SODA—Caustic, 5 cs., Order, Hamburg; **Chloride,** 34 bbls., Order, Hamburg

IMPORTS AT NORFOLK
Feb. 24 to Mar. 3

ASPHALT—2,500 tons, Order, Brighton, Trinidad, B. W. I.

BLOOD—Dried, 1,376 bgs., 90,900 kilos, Swift de La Plata, S. A., Buenos Aires; 589 bgs., 22,720 kilos, Swift & Co., Buenos Aires

CHALK—600 bgs., 30,000 kilos, Chatham Phenix National Bank & Trust Co., Rotterdam

PLASTER—800 bgs., Order, Bremen

POTASH SALTS—Kainit, 351,200 kilos, Potash Importing Corp. of America, Hamburg

PYRITES—2,000 tons, The Pyrites Co., Huelva

QUEBRACHO EXTRACT—2,932 bgs., 145,500 kilos, The Tannin Corp., Buenos Aires; 1,031 bgs., 50,000 kilos, Leas & McVitty, Buenos Aires; 6,145 bgs., 299,000 kilos, Goldman, Sachs & Co., Buenos Aires; 530 bgs., 25,000 kilos, Exchange Irving Trust Co., Buenos Aires

STARCH—Potato, 750 bgs., Stein, Hall & Co., Rotterdam

IMPORTS AT BALTIMORE
Feb. 25 to Mar. 3

BARYTES—1,000 bgs., F. H. Shallus Co., Blydendijk, Rotterdam

BONE MEAL—554 bgs., W. G. N. Rukert, Blydendijk, Rotterdam

CASSIA—420 pkgs., McCormick & Co., Blydendijk, Rotterdam

CHEMICALS—84 cks., William Schall & Co., Blydendijk, Rotterdam; 62 cks., to order, Blydendijk, Rotterdam

CLAY—70 cks., Fuller, Harshaw & Goodwin Co., Blydendijk, Rotterdam

GLYCERIN—Dynamite, 34 drs., 44,205 lbs., William H. Masson, Passat, Hamburg

HAARLEM OIL—25 cs., William H. Masson, Blydendijk, Rotterdam

LEAD GLAZINGS—2 cs., 609 lbs., to order, Passat, Hamburg

OIL—Lubricating, 1 cs., to order, Barbadian, Liverpool

ORE—Iron, 20,000 tons, Bethlehem Steel Corp., Svealand, Cruz Grande; 21,500 tons, Bethlehem Steel Corp., Amerikaland, Cruz Grande

PAINTS—1 cs., Furness, Withy & Co., Blydendijk, Rotterdam

PASTE—Compound, 1 drum, to order, Santa Cecilia, Vancouver

POTASH—78 cks., 61,037 lbs., to order, Passat, Hamburg; 60 cks., 48,974 lbs., F. H. Shallus Co., Passat, Hamburg; 78 bbls., 82,206 lbs., F. H. Shallus Co., Passat, Hamburg; 59 cks., 48,493 lbs., F. H. Shallus Co., Passat, Hamburg; **Carbonate,** 237 bbls., 120,036 lbs., William H. Masson, Passat, Hamburg; 29 bbls., 2,363 lbs., to order, Passat, Hamburg; 94 cks., 59,094 lbs., Parsons & Petit, Passat, Hamburg; **Caustic,** 100 drs., 48,453 lbs., F. H. Shallus Co., Passat, Hamburg; 60 cks., 48,248 lbs., F. H. Shallus Co., Passat, Hamburg; 100 drs., 56,351 lbs., F. H. Shallus Co., Passat, Hamburg; **Kainit, 12.4%** 1,980,000 lbs., W. G. N. Rukert, Passat, Hamburg; 500 bgs., 100,474 lbs., Potash Importing Corp., Passat, Hamburg; 199,540 lbs., Potash Importing Corp., Passat, Hamburg; 1,121,806 lbs., F. H. Shallus Co., Passat, Hamburg; **Manure Salt, 20%,** 1,452,880 lbs., W. G. N. Rukert, Ivar, Antwerp; **30%,** 216,920 lbs., W. G. N. Rukert, Ivar, Antwerp; 22,450 bgs., 4,510,484 lbs., F. H. Shallus Co., Passat, Hamburg; **20%,** 3,400,401 lbs., Potash Importing Corp., Passat, Hamburg; **30%,** 523, 615 lbs., F. H. Shallus Co., Passat, Hamburg; **Muriate, 50%,** 14,200 bgs., 2,834,093 lbs., W. G. N. Rukert, Ivar, Antwerp; 6,940 bgs., 1,035,540 lbs., F. H. Shallus Co., Passat, Hamburg; 199,540 lbs., F. H. Shallus, Passat, Hamburg; **Sulphate,** 1,000 bgs., 199,584 lbs., W.G. N. Rukert, Ivar, Antwerp; 4,300 bgs., 803,792 lbs., F. H. Shallus Co., Passat, Hamburg

SEED,—Sugar Beet, 1,000 bgs., Baltimore & Ohio R. R., Arkansas, Copenhagen

SHEEP DIP—50 cks., F. H. Shallus, Barbadian, Liverpool

SODA—Nitrate, 205 bgs., R. W. Greeff & Co., Inc., New York, Tampa, Brevik

VICIA SATIVA—300 bgs., 66,000 lbs., William H. Masson, Arkansas, Copenahgen

IMPORTS AT NORFOLK
Feb. 10 to 17

CLAY—China, 3,055 tons, Paper Makers Importing Corp., Fowey; 139 tons, John W. Higman & Co., Inc., Fowey; **Ball,** 586 tons, Higman & Co., Inc., Fowey; 29 tons, John W. Higman & Co., Fowey

CORNWALL STONE—Crude, 496 tons, Paper Makers Importing Corp., Fowey

MANGANESE ORE—3,000 tons, Order, Calcutta

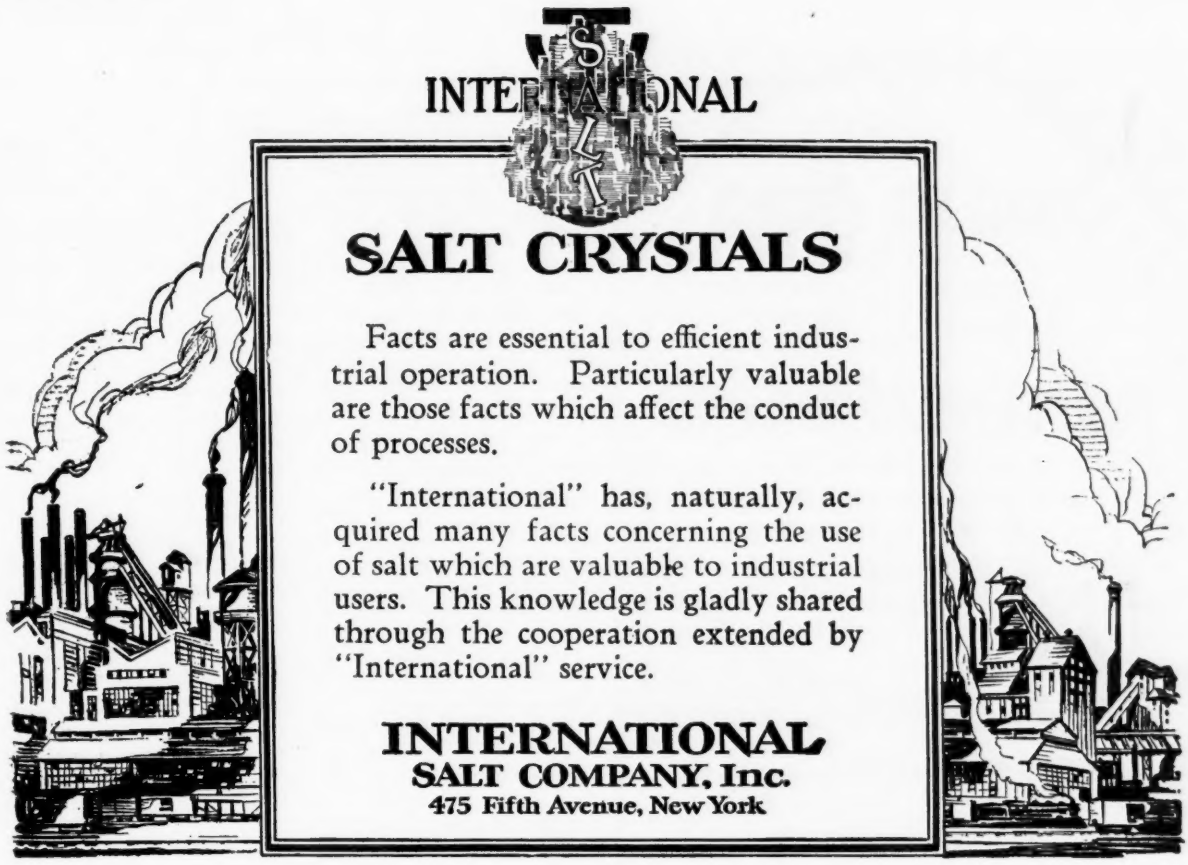
MOLASSES—1,575,500 gallons, Dunbar Molasses Co., San Pedro de Macoris

Feb. 17 to 24

BONE MEAL—1,108 bgs., 101,500 kilos, Order, Rotterdam

MANURE—Goat, 2,100,000 kilos, Order, La Vela de Coro, Venezuela

POTASH SALTS—Kainit, 12.4%, bulk, 3,539,000 kilos, Potash Imptg. Corp. of America, Nordenham; **Manure Salt, 20%,** bulk, 772,000 kilos, Potash Imptg. Corp. of America, Nordenham; **Muriate, 78/81%,** 1,500 bgs., 137,078 kilos, Potash Imptg. Corp of America, Nordenham; **Sulphate,** 500 bgs., 45,612 kilos. Potash Imptg. Corp. of America, Nordenham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COPPER SULFATE

(Continued from page 360)

expectation, not proved to be a disturbing factor in the market situation.

Due not a little to the fact that the American farmer, especially in the North and Middlewest, is applying copper sulphate as a preventive and no longer awaiting the insect ravages in his field, our domestic market has widened and made more secure by the agricultural demand in this country. Indications are already noted that this seasonal consumption of the product will be well maintained during the coming Spring. Important factors in the industry agree that while there is not much likelihood of higher prices, there will not be any cuts in price, unless there should be a decided slump in the copper market. The metal is moving in a routine way with good export demand, but at the present time, production is "curtailed" which always results in basic uncertainty in the market.

GLUCOSE

(Continued from page 365)

kettles is allowed to crystallize. This syrup contains about seventy per cent of glucose and about ten per cent of dextrin, and looks just like glucose syrup, differing only in the dextrin content. The syrup is more viscous the less dextrin it contains and the solid mass obtained will be firmer, the less of the latter product it contains, for dextrin does not crystallize and in fact also hinders the crystallization of the glucose. It has been found that the presence of but a small amount of dextrin is able to prevent the dextrose from crystallizing. This explains the real difference that exists between glucose syrup and solid glucose.

A pure grade of glucose is also made, one that contains only a very small percentage of substances which are fermentable. There are two conditions which underlie the formation of this product, and one is that the saccharification of the starch be as complete as possible, and second that the crystallization of the boiled mass is such that the mother liquor can be readily separated from the solid crystals. The first condition is fulfilled by carrying out the operation in a closed vessel under several atmospheres pressure, which can be best obtained by means of compressed air or compressed carbon dioxide gas. The temperature must not be allowed to go beyond 130 degrees C.

The important step in the process beyond this point is the crystallization of the liquor which is accomplished in suitable apparatus at a temperature of 30 to 40 degrees C after a small amount of pure crystals has been introduced into the mass. The state of the crystals, that is whether hydrous or anhydrous, was first thought to be of moment, but it is now possible to obtain just as good results with the anhydrous crystals as with the hydrated crystals. The hydrated crystallized glucose contains about 9.09 per cent of water of crystallization. The crystals are in the form of small flakes which are grouped in spherical aggregates and which melt below a temperature of 100 degrees C. Glucose itself crystallizes in the form of needle-like crystals when in the anhydrous condition and these crystals melt only at a temperature of 146 degrees C and do not yield water if heated up to this temperature.

The crystallization of the mass takes from three to ten days according to the purity of the liquor. The anhydrous crystals crystallize more rapidly than the hydrated and the yield of the first product is about sixty to seventy per cent of the weight of the starch. The mother liquor, which is recovered after centrifuging, is again evaporated and crystallized, a new batch of crystals being obtained; in fact these operations are repeated and a third batch is

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MANUFACTURERS AND DISTRIBUTORS

(Continued from page 365)

permanent touch with his customers and he is enabled to put as much effort as he desires on any one or all of his products. Perhaps his profits for a while are not large—less even than when working through a distributor. But the responsible manufacturers are in the business to stay and they must compare present high profits with possible future difficulty against a permanent sales organization which will ultimately function as economically as an agent's organization, if not more so.

The manufacturer cannot consider any arrangement economical for the sole reason that it pays better at any given time,—he must consider the results as they will appear over a long period of time.

When manufacturers enter what has been the field of the sales agent and broker, it is because they feel their best interests are served by so doing, because they feel that distributors are not serving them satisfactorily enough at present or are not likely to do so in the future.

In this matter of distribution, chemical manufacturers are purchasers as well as sellers. They purchase the services of the agent who has distribution for sale to the manufacturer as well as chemicals for sale to the public at large. As such, the manufacturers enjoy in some degree the prerogative of a buyer over a seller. They may buy as much or as little as they please or elect not to purchase at all.

They may decide, for example, to buy the services of such agents to distribute merchandise in less-than-carload lots, while they themselves take care of the carload accounts. They may go further and avail themselves of this distributing service on less-than-carload shipments only in certain localities in that territory covered by the agent, while their own organization takes care of other less-than-carload accounts in the remainder of the territory. Indeed, manufacturers and their distributors may act as competitors in the same field.

Competition on the part of other manufacturers is aiding this tendency to deal direct with consumers. Some buyers would rather deal "direct" than through an intermediary, feeling that being in closer touch with their source of supply they will be able to get a little better service, especially in the form of specialized technical information and assistance. When, for some reason or other, one manufacturer eliminates independent sales agents and brokers from his chain of distribution, his competitors feel called upon to take a similar step. And it is usually true that a company that manufactures a limited number of chemicals is better able to render technical service. Scientific libraries, well equipped laboratories, and trained chemists and engineers naturally familiar with the products the company makes, are a necessary part of a chemical works. Such a company is, of course, in better position to be of assistance to the consumers of the chemicals it makes than a distributor who must handle a great number of products.

The successful existence of the American chemical industry is in the hands of the manufacturers; their policies may be expected to reflect the necessity self-preservation. Self-preservation depends to a large extent on effective efforts to check the influx of imported chemicals. Certainly it is not the American manufacturers who are importing and distributing foreign made chemicals at low prices in competition with domestic products, and distributors should not be surprised when manufacturers in this country do not cooperate with a great deal of enthusiasm with agents and brokers handling imported goods. They naturally hesitate to assist in establishing a group of organizations which could very readily be used against them with unfortunate results to the industry as a whole.

The only normal condition of any business is a condition of change—causes, forces and tendencies in varying intensities oppose or assist each other in different degrees but one can usually discern over a period of time a well defined trend. In the field of chemical distribution, while the independent broker and agent will likely continue to play important parts, it appears that, wisely or unwisely, their activities are being narrowed by the sales policies of the more progressive manufacturers and it seems to the writer, as a disinterested observer and commentator, that the distributors have brought it on themselves.

COKE OVENS INCREASING RAPIDLY

(Continued from page 364)

lands near Taylortown, Pa., and the construction of houses for miners is under way.

Improvements at Clairton are part of a $31,000,000 development, which includes the construction of extensive docking facilities and additions to the company's river fleet. Clairton plant, which is on the Monongahela River, will be supplied with coal from the Steel Corporation's mines on the upper portion of the river. Coal will be transported in the company's own barges. Underground conveyors are being installed near Palmer, Pa., which will move coal from several mines to tipples on the river. A similar system is already in operation near Brownsville, Pa. The new development will divert 3,887,250 tons of coal a year from old beehive ovens to the modern plant.

Swing to by-product production will eventually confine operations of the H. C. Frick Coke Co., a subsidiary of the United States Steel Corp., to mining only, and coke production will be placed in the hands of the steelmaking subsidiaries.

Beehive coke production is generally near to the mine mouths, since it is cheaper to ship coke than coal to the mills. By-product plants, however, are more economically operated in connection with blast furnace and open-hearth plants, where the gas output of the ovens can be used and waste blast furnace gas may be used to heat the coke ovens.

Extent of economies being effected by these improvements is shown by the fact that coking of a ton of coal in a beehive oven yields 66% coke and nothing else. In by-product ovens 75% coke is obtained and in addition 10,000 cubic feet of gas, 5 gallons of tar and 20 to 25 pounds of ammonium sulphate.

Besides coke for blast furnace use, by-product ovens yield a good smokeless domestic fuel. Small screenings of by-product coke, which are unsuitable for blast furnaces, are being sold to domestic dealers by both Jones & Laughlin and Carnegie Steel. The structure of by-product coke is entirely different from that of beehive coke, and it is better for domestic heating. It is porous and does not have a metallic finish.

"Industrial Uses of Sodium Sulfate," by L. Heber Cole, of the Mines Branch, Canadian Department of Mines, Ottawa, appeared in "The Chemical Trade Journal and Chemical Engineer" (London), in the issue of Jan. 28, page 81.

"How to Succeed With The Vat Dyes," by M. A. Festiner, is a feature in "The Dyer and Calico Printer, London, Feb. 1, 1927.

Patents

Latest Issues Covering Chemical Products and Processes.

TO SECURE COPIES OF PATENTS

U. S., 10c U. S. Patent Office, Washington. British, draft on London, one shi ling, British Patent Office, 25 Southampton Bldgs., Chancery Lane, W. C. 2, London. French, one franc, Minister of Commerce & Industry, Paris. German, draft on Berlin, one mark, German Patent Office, Berlin.

Application date appears with each patent.

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262,092.—Centrifugal Machines. Compagnie Industrielle des Moteurs a Explosion, Paris, and D. Perrier, Loire, France. Nov. 16, 1926.

262,096.—Density Deparators. Union A. G. fuer Metallindustrie, Hanover, Germany. Nov. 19, 1926.

262,097.—Nitro Compounds. A. Rasoumeeff, Mulhouse, assignor, M. Battegay, Muhlhouse, France. Nov. 19, 1926.

262,099.—Hydrogenating Coal. I. G. Farbenindustrie A. G. Nov. 20, 1926.

262,101.—Carboxylic Acids and Anhydrides. I. G. Farbenindustrie A. G. Nov. 22, 1926.

262,107.—Lubricating and Transformer Oils. F. Hofmann and M. Dunkel, Breslau, Germany. Nov. 22, 1926.

262,110.—Fused Silica. L. B. Miller, Lynn, Mass., assignor, British-Thomson-Houston Co., Ltd., London. Nov. 23, 1926.

262,119.—Anthraquinone Derivatives. I. G. Farbenindustrie A. G. Nov. 25, 1926.

262,120.—Dehydrogenated Compounds. I. G. Farbenindustrie A. G. Nov. 25, 1926.

262,131.—Filtering Media. Ultra-Filtre D.M.S., Paris. Nov. 26, 1926.

262,134.—Reaction Products of Cashew Nuts. M. T. Harvey, New York. Nov. 27, 1926.

262,141.—Thiazoles. A. G. fuer Anilin Fabrikation, Berlin, assignor, I. G. Farbenindustrie A. G. Nov. 29, 1926.

262,145.—Separating Solid Materials Between Rotary Rollers. Soc. d'Applications et de Recherches Scientifiques, Issy-les-Moulineaux, Seine. Nov. 29, 1926.

262,148.—Condensation Products of Methylolureas. G. Walter, Vienna. Nov. 29, 1926

262,159. — Enamels. C. Toto-Gibaru, Haran Court, France. June 1 , 1925.

262,161.—Disc Mills for paints, pigments, etc. J. Jameson, Southport, Lancashire, and R. Gaunt, Manchester. July 2, 1925.

262,179.—Porous India Rubber. H. Beckmann, Berlin. Sept. 2, 1925.

262,222.—Edge Runners. F. Chamberlain and Gripsons, Ltd., Sheffield. Oct. 12, 1925.

262,232.—Magnesia Mortars. J. H. Ditter, Hanau, Germany. Oct. 30, 1925.

262,243.—Azo Dyes. British Dyestuffs Corp., M. Mendoza and K. H. Saunders, Manchester. Nov. 13, 1925.

262,276.—Activated Carbon. K. Bube, Halle-Saale, Germany. Dec. 22, 1925.

262,294.—Portland Cements and Mortars. C. Schneider, Malmo, Sweden. Jan. 28, 1926.

262,302.—Cracking and Carbonizing. W. E. Trent, New York. Feb. 15, 1926.

262,306.—Silica Gel. I. G. Farbenindustrie A. G. Feb. 19, 1926.

262,313.—India Rubber and Adhesives. D. M.R. McCubbin, Wallsend-on Tyne. May 5, 1925.

262,320.—Revivifying Purifier Waste. Soc. Anon. des Fours a Coke Semet-Solvay & Piette, Brussels. Apr. 7, 1926.

262,363.—Liquid Fuel. E. G. E. Meyer, London. June 12, 1925.

262,364.—Keten. H. Dreyfus, London. June 13, 1925.

262,371.—Polishing Compositions. C. H. Thompson Wallasey and W. J. McGivern, Lower Bebington, Cheshire. Aug. 6, 1925.

262,822.—Treating Effluents from Dye Works. P. Mahler, assignor, Darco Sales Corp., New York. June 18, 1926.

262,397. — Sulphuric Acid. Metallbank und Metallurgische Ges. A. G., Frankfort. Oct. 22, 1926.

262,404.—Recovering Volatile Substances from Air or Gases. Chemische Fabrik Griesheim-Elektron, Frankfort, assignor, I. G. Farbenindustrie A. G. Nov. 3, 1926.

262,405.—Alumina. B. T. Hersfield, Badin, N. C., assignor, Aluminum Co. of America, Pittsburgh. Nov. 3, 1926.

262,408.—Ammonium Carbonate. Rhenania-Kunheim Verein Chemischer Fabriken A. G., Berlin. Nov. 11, 1926.

262,418.—Soluble Chromium Compounds of Azo Dyes. I. G. Farbenindustrie A. G. Nov. 25, 1926.

262,423.—Hydrocyanic Acid Generator. H. Laine, Marseilles. Nov. 30, 1926.

262,447 454-5.—Phosphoric Acid process. I. G. Farbenindustrie A. G. Dec. 2, 1926. Dec. 3, 1926 (2).

262,456.—Purifying Alkali Cyanides. I. G. Farbenindustrie A. G. Dec. 3, 1926.

262,457.—Thioindigoid Dyes. Farbwerke vorm. Meister, Lucius & Bruening, Hoechst, assignors. I. G. Farbenindustrie A. G. Dec. 3, 1926.

GERMAN PATENTS

Issued Feb. 3, 1927

438,228.—Distillation of Coal. E. Jena, Muenchen. Mar. 13, 1923.

438,185.—Separating Liquids of Different Specific Gravities. R. C. Knight, Pinner, and H. D. Smith, Newcastle, England. Feb. 17, 1924.

438,269.—Purifying Gases. B. Christoffels, Herzogenrath, Germany. Jan. 25, 1924.

438,176.—Continuous Absorption of Absorptive Substances from Gases by means of porous bodies. I. G. Farbenindustrie A. G. Oct. 15, 1922.

438,071.—Highly Active Contact Masses. I. G. Farbenindustrie A. G. June 14, 1921.

438,221.—Finely Distributed Solids. T. Goldschmidt A. G., Essen, and Dr. B. Kohlschuetter, Bern. Aug. 5, 1919.

438,177.—Hydrochloric Acid and Magnesia. Chemische Fabriken Wolkromshausen G.m.b.H., Wolkramshausen and M. Helbig, Gera, Russia. Jan. 5, 1924.

438,079.—Phosphoric Acid and Hydrogen, process. I. G. Farbenindustrie A. G. Nov. 21, 1924

438,172.—Continuous Purification of Crude Carbon Disulphide. Dr. E. Legeler and Dr. P. Esselmann, Premnitz. July 7, 1925.

438,186.—Carbon Dioxide for Raising Plants. F. Hoerning, Steinheim. July 15, 1925.

438,229.—Monopotassium Phosphate and Potassium Nitrate from Solutions of Both Salts. I. G. Farbenindustrie A. G. Oct. 1, 1925.

438,197.—Vat Dyes. I. G. Farbenindustrie A. G. Oct. 11, 1924.

438,292.—Bleaching Wool Fat. Dr. I. Lifschuetz, Hamburg. Oct. 14, 1922.

438,190.—Emulsitving Agent. I. G. Farbenindustrie A. G. Sept. 9, 1922.

439,199-200.—Tanning Agent. I. G. Far-

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benindustrie A. G. July 24, 1925, and Sept. 7, 1924.

438,240.—Insecticide. Dr. H. Vogel, Premnitz. July 7, 1923.

438,241.—Fungicide and Bactericide. Verein fuer Chemische und Metallurgische Produktion, Aussig, Czechoslovakia. June 18, 1924.

426,269.—Press for Oil Seeds. Maschinenfabrik M. Fhrhardt A. G., Wolfenbuettel. Mar. 5, 1925.

438,268.—Clarifying Waters from Dyeing Establishments. Dr. G. Ullmann, Vienna. Dec. 19, 1924.

FRENCH PATENTS

Issued Jan. 20, 1927

620,010.— Dyeing and Waxing Wood in a single operation. A Valentin and M. Imbert. Aug. 5, 1926.

620,059.—Artificial Petroleum by catlytic pyrogenetic distillation of organic oils and all glycerides. A. Maihle. Dec. 18, 1925.

620,080.—Special Soap. K. Poulain and H. A. Monnier. Dec. 18, 1925.

6 9,965.—Treating Rubber and apparatus therefor. The Dunlop Rubber Co., Ltd. Aug. 5, 1926.

619,963.—Distilled Water process and apparatus. I. L. Pouget. Aug. 5, 1926.

6 9,985.—Preventing Explosions in Electrical Dust Precipitating Installations Siemens Schuckert Werke G.m.b.H. Aug 7, 1926.

620,001.—Continuous Rotary Cellular Filters. R. Moritz. Aug. 7, 1926.

620,095.—Extracting Dust and Foreign Matter from Air, etc. S. N. Chew. Aug. 10, 1926.

620, 08.—Purifying Centrifuge. O. Mury M. Pelet and Societe d'Enterprise et d'Exploitation, Ateliers d'Arnold. Aug. 11, 1926.

Exports at New York

ACIDS—Acetic, 20 carboys, Feb. 19, Vera Cruz; 2 bbls., Feb. 2, Progresso; **Acetic Glacial,** 46 cts., Feb 19, Vera Cruz; 27 bbls., Feb. 2, Vera Cruz; **Boric,** 3 cs., Feb. 4, Pto. Cortez; **Citric,** 27 kegs, Feb. 19, Tampico; **Hydrophoric,** 1 carboy, Feb. 2, Vera Cruz; **Muriatic,** 40 carboys, Feb. 1, Cartagena; 10 carboys, Feb. 15, Kingston; 200 carboys, Feb. 11, Pastelillo; **Picric,** 1 cs., Feb. 2, Vera Cruz; **Stearic,** 50 bgs., Feb 1', Liverpool; **Sulphuric,** 83 drs., Feb. 16, Valparaiso; 4 carboys, Feb. 11, Pto. Cabello; 8 carboys, Feb. 1, Pto. Colombia; 10 demijohns, Jan. 28, East London; 10 demijohns, Jan. 28, Algoa Bay; 10 demijohns, Jan. 28, Port Natal; 10 carboys, Feb. 14, Buenaventura; 50 carboys, Feb. 14, Panama; 1 carboy, Feb. 2, Progresso; **Tartaric,** 3 kegs, Feb. 19, Tampico

ALCOHOL—Butyl, 6 drs., Feb. 4, Sydney; 6 drs., Feb. 19, Sydney

ALUM—1 keg, Feb. 4, Pto. Cortez

ALUMINA—68 bbls., Feb. 1, Cartagena

AMMONIUM—Anhydrous, 10 cyl., Feb. 2, Vera Cruz; 6 cyl., Feb. 9, Vera Cruz; 16 cyl., Feb. 9, London; 12 cyl., Feb. 14, Buenaventura; 206 cyl., Jan. 21, London; **Sulfate,** 6,820 bgs., Feb 1', Sourabaya; 1,120 bgs., Jan. 28, Port Louis

ARSENIC—849 cs., Feb. 9, London

ASPHALT—216 drs., Jan. 21, Liverpool; 153 drs., Feb. 21, Rotterdam; 212 drs., Feb. 17, Buenos Aires; 1,310 bbls., Jan. 27, Liverpool

BARIUM—Sulfate, 50 cs., Feb. 14, Cristobal; 5 cs., Feb. 1', Havana

BLEACHING POWDER—467 drs., Feb. 21 Buenos Aires

BUTANOL—40 drs., Feb. 14, Genoa

BUTYL TERTIARY—10 drs., Feb. 21, Amsterdam

CALCIUM—Carbide, 60 drs., Feb. 1', La Guaira; 1,610 drs., Feb 1. Manila; 50 drs., Feb. 9, Maracaibo; 1,345 drs., Feb. 4, Buenos Aires; 30 drs., Feb. 17, Hongkong; 40 drs., Feb. 14, Buenaventura; 10 drs., 10 cs., Feb. 2, Progresso

CASEIN GLUE—100 bbls., Feb. 1, Manila

CHLORINE—13 cyl., Feb. 14, La Libertad

CLAY—134 bbls., Feb. 11, Kobe; 63 bgs., Feb. 15, Oslo; 800 bgs., Feb. 8, Barcelona; 196 sks., Jan. 14, Liverpool

COAL TAR PITCH—4,413 bbls., Feb. 8, Havre

COLORS—5 bbls., Feb. 11, Havana; 8 cs., Feb. 4, Buenos Aires; 45 drs., Jan. 28, Bombay; 12 cs., Feb. 9, Rio de Janeiro; 2 kegs, Feb. 8, Havre; 14 bbls., Feb. 19, Sydney; 5 cs., Jan. 27, Liverpool; 16 bbls., Feb. 2, Vera Cruz; **Bronze Powder,** 20 cs., Feb. 11, Havana; **Coal Tar,** 4 bbls., Feb. 14, Buenaventura; 8 drs., Feb. 14, Buenaventura; **Earth,** 4 kegs, Feb. 21, La Guaira; 13 pgs., Feb. 18, La Guaira

COPPER—Sulfate, 20 bbls., Feb. 1, Manila; 10 bbls., Feb. 9, Tampico

CORN FLOUR—240 bgs., Feb. 4, Fremantle; 40 cs., Feb. 3, Hongkong; 42 cs., Feb. 4, Pto. Barrios; 1,100 cs., Feb. 19, Vera Cruz; 90 cs., Feb. 19, Tampico; 675 cs., Feb. 11, Pastelillo

CORNSTARCH—45 cs., Feb. 4, Fremantle; 40 cs., Feb. 11, Pto. Barrios; 90 bgs., 50 bbls., Feb. 11, Liverpool; 53 cs., Feb. 11, Port au Prince; 16 bgs., 575 cs., Feb. 1, Honolulu; 120 cs., 65 cts., Feb. 1, Kahului; 50 cs., 25 cts., Feb. 1, Hilo; 60 cs., 45 cts., Feb. 1, Port Allen; 5 cs., Feb. 9, Curacao; 10 cs., Feb. 11 Pto. Plata; 1,000 bgs., Feb. 16, Constantinople; 1,320 bgs., Feb. 16, Copenhagen; 103 cs., Jan. 28, Beira; 805 bgs., Jan. 28, Capetown; 310 cs., Jan. 28, East London; 175 cs., Jan. 28, Algoa Bay; 75 cs., Jan. 28, Port Natal; 100 cs., Feb. 3, Singapore; 125 cs., Feb. 8, Seville; 800 bgs., Feb. 8, Barcelona; 10 bgs., 15 cs., Feb. 19, Tampico

CORN SYRUP—300 bbls., Feb. 4, Montevideo; 240 bbls., Feb. 4, Buenos Aires; 500 bbls., Feb. 10, Montevideo; 150 bbls., Feb. 4, Constantinople; 3 bbls., Jan. 28, Capetown; 60 bbls., Jan. 14, Hamburg; 300 bbls., Feb. 17, Buenos Aires; 60 bbls., Feb. 19, Tampico; 165 bbls., Feb. 5, Havana;

CORN SUGAR—200 bgs., Feb. 4, Buenos Aires

CRESOLENE—48 cs., Jan. 28, Port Natal

CREOSOTE—8 carboys, Feb. 11, Yokohama

CYANIDE—1,007 drs., Feb. 19, Tampico; 200 drs., Feb. 4, Fremantle

DEXTRINE—125 bgs., Feb. 4, Buenos Aires; 25 bgs., Feb. 4, Constantinople; 18 bgs., Feb. 3 Shanghai; 7 drs., Jan. 28, Capetown; 200 bgs., Jan. 21, Manchester

DYESTUFFS—101 bbls., 44 drs., Jan. 28 Bombay; 3 kegs, Feb. 3, Manila; 5 drs., Feb 19, Tampico; 10 drs., Feb. 11, Havana

EPSOM SALTS—10 kegs, Feb. 11, Port au Prince

ETHYLENCHLORHYDRIN—6 drs,. Feb. 2 Rotterdam

EXTRACTS—Tanning, 20 bbls., Feb. 4, Sydney; 10 bbls., Feb. 10, Montevideo; 10 bbls., Jan. 28, Rotterdam

FELDSPAR—40 bgs., Feb. 3, Shanghai

FORMALDEHYDE—5 bbls., Feb. 17, Singapore; 110 bbls., Jan. 22, Japan; 10 bbls., Feb. 19, Sydney

FULLER'S EARTH—380 bgs., Feb. 14, Marseilles; 4,8 8 bgs., Feb. 2, Novorossisk

GLAUBER SALTS—2 bbls., Feb. 4, Pto. Cortez

GLUCOSE—30 bbls., Feb. 4, Beyrouth; 40 bbls., Jan. 7, Manchester; 60 bbls., Feb. 4, Constantinople; 100 bbls., Feb. 16, Copenhagen; 20 bbls., Feb. 16, Oslo; 20 bbls., Jan. 28, East London 30 bbls., Jan. 28, Algoa Bay; 20 bbls., Jan. 28, Port Natal; 10 bbls., Feb. 3, Singapore; 20 bbls., Jan. 21, Manchester; 100 bgs., Feb. 19, Tampico; 2 bbls., Feb. 2, Progresso; 6 bbls., Feb. 2, Vera Cruz

GLUE—44 bgs., Feb. 2, Vera Cruz

GRAPHITE—10 cs., Jan. 14, Liverpool

KRESO—1 cs., Feb. 3, Manila; 3 drs., 13 cs., Feb. 5, Pto. Barrios

LIME—Chloride, 154 drs., 200 cs., Feb. 11, Havana; **Hypo,** 5 cs., Feb. 2, Vera Cruz

LINSEED OILCAKE—4,330 bgs., Feb. 1, Belfast; 14,000 bgs., Feb. 1', Rotterdam; 5,155 bgs., Jan. 28, Rotterdam; 2,001 bgs., Jan. 28, Rotterdam; 727 bgs., Jan. 28, Rotterdam; 23,988 bgs., Feb. 1, Antwerp; 3,915 bgs., Feb. 9, London; 10,500 bgs., Feb. 2', Rotterdam

MAGNESIA CALCINED—2 bbls., Feb. 2, Vera Cruz

MALT—7,500 bgs., Feb. 5, Buenos Aires; 50 bgs., Feb. 10, Rio de Janeiro; 1,000 bgs., Feb. 14, Genoa; 4,000 bgs., Feb. 21, Buenos Aires; 1,700 bgs., Jan. 21, London; 2,000 bgs., Feb. 9, Rio de Janeiro; 2,200 bgs., Feb. 4, Pto. Barrios

NICKEL OXIDE—269 bgs., Jan. 28, Rotterdam

NICOTINE—Sulfate, 10 drs., Feb. 10, Montevideo

NUMOMOLINE—2 bbls., Jan. 28, Capetown

OILS—Castor, 5 cs., Feb. 17, Bangkok; 21 cs., Feb. 2, Progresso; **Cod Liver,** 10 bbls., Feb. 4, Sydney; **Linseed,** 35 drs., Feb. 21, Rotterdam; 125 drs., Feb. 14, Havana; **Neatsfoot,** 10 bbls., Feb. 14, Genoa

POTASSIUM SALTS—Caustic, 10 drs., Feb. 6, Vera Cruz; **Chlorate,** 100 kegs, Feb. 14, Buenaventura; **Iodide,** 4 kegs, Feb. 11, Havana

ROSIN—100 bbls., Feb. 4, Sydney; 12 bbls., Feb. 11, Maracaibo; 25 bbls., Feb. 9, Maracaibo; 4 bbls., Feb. 14, Panama

SAL AMMONIAC—2 cks., Feb. 10, Tampico;

SALTPETRE—10 kegs, Feb. 14, Tumaco

SODIUM SALTS—Ash, 34 kegs, Feb. 5, Port Natal; 150 bbls., Feb. 1, Honolulu; 200 bbls., Feb. 17, Manila; 10 kegs, Feb. 5, Algoa Bay; 485 bgs., Jan. 28, Rotterdam; 30 kegs, Jan. 27, Liverpool; 30 bbls., Feb. 11, Havana; **Bicarbonate,** 150 kegs, Feb. 3, Hongkong; 67 bbls., Feb. 3, Hongkong; 12 kegs Feb. 3, Singapore; 10 kegs, Feb. 5, Pto. Plata; 10 kegs, Feb. 5, Macoris; 5 kegs, Feb. 9, Curacao; 326 kegs, Feb. 17, Manila; 202 cks., Feb. 14, Genoa; 25 kegs, Feb. 4, Guatemala City; 10 kegs, Feb. 4, Tela; 4 kegs, Feb. 14, Tumaco; **Bichromate,** 128 drs., Feb. 5, Delagoa Bay; **Carbonate,** 4 cs., Feb. 2, Vera Cruz; **Caustic,** 10 drs., Feb. 14, Tumaco; 18 drs., Feb. 15, Kingston; 160 drs., Feb. 19, Vera Cruz; 80 drs., Feb. 9, Vera Cruz; 80 drs., Feb. 11, Pastelillo; 180 drs., Feb. 2, Vera Cruz; 320 drs., Feb. 5, Buenos Aires; 75 drs., Feb. 1, Cebu; 00 drs., Feb. 1, Cartagena; 128 drs., Feb. 5, Delagoa Bay; 124 drs., Feb. 5, Port Natal; 64 drs., Feb. 5, Capetown; 100 drs., Feb. 14, Buenaventura; 480 drs., Feb. 11, Kobe; 30 drs., Feb. 3, Hongkong; 180 drs., 800 cs., Feb. 9, Santos; **Hypo,** 5 cs., Feb. 2 Vera Cruz; **Sal,** 12 kegs, Feb. 11, Port au Prince; 250 bbls., Feb. 5, Havana; **Silicate,** 6 drs., Feb. 11, Dairen; 28 drs., Feb. 11, Shanghai; 40 drs., Feb. 11, Pastelillo; 10 drs., Feb. 11, Pto. Cabello; 50 drs., Feb. 2, Progresso; **Stearate,** 7 bbls., Feb. 4, Sydney; **Sulfate,** 00 kegs, Feb. 4, Pto. Barrios

SOLVAL—25 drs., Feb. 17, Bangkok

TALC—210 bgs., Feb. 14, Genoa; 200 bgs., Feb. 5, Havana; 140 bgs., Jan. 27, Liverpool

TARTAR CREAM—20 kegs, Feb. 2, Vera Cruz

ULTRAMARINE BLUE—30 kegs, Feb. 11, Dairen; 20 cs., Feb. 1, Cartagena

WAX—140 bbls., Jan. 27, Liverpool; **Carnauba,** 39 bgs., Feb. 19, Melbourne; 7 bgs., Feb. 19, Sydney

ZINC—Oxide, 100 bbls., Feb. 2, Rotterdam; 2,700 bbls., Feb. 16, Havre; 50 bbls., Jan. 26, Hull; 300 bbls., Feb. 16, Copenhagen; 20 bbls., Jan. 14, Hamburg; 200 bbls., Jan. 14, Berlin; 10 bbls., Feb. 11, Havana

DISINFECTANTS STOPPED EPIDEMIC IN FLORIDA

An interesting sidelight on the efficacy of proper and prompt use of disinfectants in preventing the spread of disease in times when regular sanitary conditions are seriously disrupted is contained in the following letter sent to C. C. Baird by the purchasing agent of the City of Miami, Fla.

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Reliable Piece Dye Works, New York; 100 common, no par; S. Factorow, A. Factorow, B. Factorow.

Leo Rosenthal Import Co., New York; $9,000; paints and varnishes; L. R. Rosenthal, U. Cervello, R. F. Adams.

Windsor Cleaners & Dyers, Brooklyn, N. Y.; $10,000 S. Wilkov, M. Wilkov, R. Schultz.

B. C. L. Cleaning Co., Brooklyn, N. Y.; $25,000; dyeing; A. Lavin, F. Berliner, H. Gardner.

Bergen Silk Dyeing Corp., Englewood, N. J.; $500,000; Olav Berg, Max Imhoff, William W. Evans.

North American Gypsum Co., Inc., Wilmington, Del.; $500,000; minerals.

Carolina Feldspar Corp., New York; $20,000; ores and minerals; E. D. Offen, D. Sominsky.

Nu-Life Cleaners & Dyers, Inc., Leonia, N. J.; $20,000; Joseph Pochdorf, Morris Stirris, Kasrill Auerbach, Abraham A. Krause.

Hampshire Clays, Inc., Riverside, N. J.; $25,000 preferred and 1,500 shares, no par common; C. Lloyd Neal, Julia Thomas, J. Taylor Neal.

Affiliated Co. No. 1, Wilmington, Del.; $2,000; minerals of all kinds; M. W. Cannon.

W. S. Purdy Co., New York; $20,000; analyze chemicals; J. F. Kiely, M. C. Kiely, T. J. McGrath.

Universal Match Securities Corp., Wilmington, Del. ;$35,350,000 (3,500 shares preferred and 350,000 shares common stock, all of no par value); A. L. Miller, Alfred Jervis, W. B. Megear.

United Engineering Machine Corp., Wilmington, Del.; $100,000; paper, pulp making machinery; M. L. Rogers.

Universal Match Corp., Wilmington, Del.; $500,000; matches; A. L. Miller.

N. Ring Corp., New York; 800 shares, ni par; cleansing fluids; W. P. Mason, Jr., M. B. Gordon, B. Isreal.

King Utilities Co., Brooklyn, N. Y.; $3,000; fire extinguishers; A. Schumuckler, A. Alterman, H. Alterman.

Noark Products Co., Camden, N. J.; $100,000; denatured alcohol; Frank S. Muzzey, F. Stanley Saurman, Thomas J. Cauley.

Stanley Laboratories, Brooklyn, N. Y.; 500 shares at $100 each; 1,000 common, no par; crude rubber, etc., M. U. Meacher, S. E. Vreeland, P. Abrams.

Pan-American Vegetable Oil Co., Plainfield, N. J.; 1,000 shares, no par value; M. A. Dalley, Elizabeth R. Spalluto, Meyer Canter.

Behrman & Harris, New York; $150,000; chemicals; B. Behrman, E. Behrman, B. Harris.

Virginia Textiles Corp., New York; $300,000; silk and wool; G. Gordon, D. Sustick, J. L. Anderson.

Empire Carbonic Co., New York; $50,000; carbonic acid gas; W. Matthews, T. A. Hoffman, M. V. Bickelhaupt.

American Catalin Corp., 2,500 shares, $48 each; 13,000 shares, $1 each; active capital $133,000; phenolic goods; R. C. Rand, W. Rand, Jr., M. D. Welch.

Sunso, New York; 500 shares, $50 each; 500 common, no par; T. S. Andrews, L. E. White, W. R. Miller.

Excel Tanning Co., Newark, N .J.; 2,000 shares, no par value; Lulu G. Michaelis, Gladys A. Savage, Marion Gibney.

Keystone Wood, Chemical & Lumber Corp., Olean, N. Y.; 15,000 shares, $100 each; 15,000 common, no par; T. H. Quinn, M. F. Quinn, P. H. Quinn.

Gafino & Sons Piece Dyeing & Finishing Co., Paterson, N. J.; $25,000; Peter Garino, Peter Garino, Jr., Ernest Garino.

Lewis Paint & Varnish Co., East Rutherford, N. J.; $50,000; Reuben B. Kantrowitz, Samuel S. Kantrowitz, Lewis Glazer.

Millinery Silks, Inc., Paterson, N. J.; $125,000; Gabriel Leightman, Emanuel M. Morris, David L. Cole.

Braranza Mines, Inc., Wilmington, Del.; $1,000,000; minerals;; S. L. Mackey.

Super's Specialized Rubber Products Corp., Wilmington, Del.; $10,000,000 (100,000 shares no par value common stock); rubber products; Lawrence A. Subers, Dr. Paul Traub, Dr. Donald W. Rupert.

Chlorine Service Corp., New York; 500 shares, $100 each; 2,500 shares common, no par; A. B. Roth, H. M. Roth, S. Linder.

Esco Dyeing & Finishing Co., Brooklyn, N. Y.; 1,500 common, no par; E. W. Seng, F. H. Butehorn.

Marvon Corp., Poughkeepsie, N. Y.; 250 shares, $100 each; 200 common, no par; chemicals; J. B. Marian, Dr. O .R. Vonbonnewitz, A. C. Vonbonnewitz.

Lloyd Co. of Long Island, Brooklyn, N. Y.; $30,0000; wall paper; G. S. Bell, E. C. Bondy, T. J. McCelland.

Foster Oiled Fabrics Coo., Wilmington, Del., $1,500 000, J. Vernon Pimm.

Hydro Carbon Chemical Co., Newark, N. J., $50,000, paints, Nathan Gruber, Louis B. Lesser, Frederick G. Ross, Otto Metz.

Three Elephants Borax Corp., Wilmington, Del., $100,000, borax and chemicals, R. Bennett, Jr.

German-American Chemical Co., Newark, N. J., $25,000 preferred and 7,500 shares common, no par; Samuel Friedfeld, Manning P. Friedfeld, Howard Bailey.

Atlantic Keystone Petroleum Co., Inc., Wilmington, Del., $30,000,000 (300,000 shares of stock without normal or par value); petroleum, sulphur, carbon, oils.

National Royalty Co., Wilmington, Del., $10,000; mine oil, gas and other minerals.

Duroseal Corp., Wilmington, Del., $1,500,000; metal, rubber, iroon, steel, copper, lumber products.

Gekras Laboratory, New York, $10,000; chemicals; A. W. Gekker, E. S. Kashlensky.

Plastoloid, Inc., West New York, N. J., manufacture sheet pyrozylin, $125,000 preferred and 1,000 shares, no par common; Stanley Buchak, Henry Jacobson, Alfred T. Holmes.

Derich & Co., New York, 300 common, no par; chemicals; C. V. Opper, A. Rich, W. R. Bogert.

Utica Tanning Corp., Utica, N. Y., 1,000 common, no par; H. R. Beebe, F. H. Carroll, O. J. McKeon.

Leathereen Corp., Belleville, N. J., $50,000 preferred and 300 shares, no par value; leather substitutes; Henry E. Kelley, Sewell T. Tyng, Parker Newhall.

Levinsky Silk Co., Paterson, N. J., $125,000; Rose Levinsky, Isaac Levinsky, Lillian Paris.

Orazada Mines, Inc., $1,000,000; H. C. Hand.

R-W Chemical Corp., New York, $2,000; J. Wolfson, P. Rattner, H. Rattner.

, Bias Products Corp., New York 200 common, no par; make textiles; E. B. Twombley, R. Walsh, I. F. Fromm.

Real Staining & Dyeing Corp., Queens, N. Y., 200 common, no par; T. J. Kelley, M. J. Devine, L. Pittarelli.

Bowen Research Corp., Westfield, N. J., $25,000 preferred and 1,000 shares no par common; laboratory; William S. Bowen, Esther R. Bowen, Leonard Beaford.

Proctor Ellison Co., Wilmington, Del., $400,000; C. D. Maddy.

Northwest Amiesite Asphalt Co., Wilmington, Del., $100 000; T. L. Croteau.

National Barytes Coo., Wilmington, Del., $50,000; S. T. G. Smith.

Peerless Chemical Co., New York, $10,000; window glass; F. Burger, G. Rapaport, A. Dranoff.

Johns-Manville Corp., New York, 100,000 shares $100 each; 750,000 shares common, no par; W. R. Seigle, C. M. Swain, H. R. Trainer.

CAPITAL INCREASES

Old Masters Paper & Pulp Corp., Manhattan, $20,000 to $50,000.

Long View Fibre Co., Montague County, Wis.; $7,500,000 to $9,000,000.

Weyth Chemical Co., New York, $25 000 to $350,000.

Hygrade Dye Works, New York, $25,000 to $50,000.

Prever Chemical Co., New York, $10,000 to $60,000 and name changed to Prever-Colonial Corp.

Carbon Tetrachloride in Italy

There are two manufacturers of carbon tetrachloride in Italy with a total capacity of about 18,000 quintals per year. The most recent official production statistics available are for 1924 in which 4,485 quintals were manufactured. Production up to this year has remained around the 1924 figure due to the fact that the Italian market cannot absorb more than 1,500 quintals yearly.

The balance of the production must find an outlet on foreign markets. Italy exported 4,380 quintals during the first nine months of 1926 as compared with 3,641 quintals during the same period 1925. Imports were 3,613 quintals January to September inclusive 1926, compared to 5,578 quintals during the same nine months 1925.

Carbon tetrachloride is not used in Italy for the manufacture of chloroform but chiefly as a solvent for fats, nor is it used extensively in dry cleaning as in the United States. Some effort has been made to use it as a solvent in the manufacture of paints without success, due to its high specific gravity. The use of carbon tetrachloride is being displaced to a large extent by trieline or trichlorethylene and tetrachlorethane which have recently been put on the market.

Italian manufacturers have met considerable competition from the German product in the past months; as a consequence prices of carbon tetrachloride have declined from Lire 4-4.50 per kilo on tracks consignee's works to Lire 3.50-4 per kilo. (Value Lire 4.3 cents.)

In view of this information Italy does not offer much encouragement as an outlet to American manufacturers at the present time.

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secured. The latter however, are colored and contain many impurities. The first product, when the work is carried out carefully, is of 99.5 to 99.6 per cent purity. Only traces of dextrin are contained in it and the water content is not less than one per cent. Recrystallization gives a pure and almost perfectly white product.

An interesting by-product in the manufacture of glucose by the saccharification of starch is the liquor that remains after centrifuging. This liquor contains all the impurities of the boiled mass of starch and reagent, which are principally dextrins, isomaltose and maltose. When left to itself for a certain length of time, it will solidify and form a hard mass, of a dirty brown color in which there are signs of a peculiar sort of crystallization. This by-product can be used to advantage in distilleries. It is commonly known as climax sugar and contains about twelve to thirteen per cent of water and about ninety per cent of glucose figured on the dry weight of the substance.

Just a word must be said on the manufacture of glucose syrups. This process is not the same as that used in making crystallized glucose. In the first place the aim of the process is not the same, for in this case it is desired to obtain a product which contains a certain quantity of dextrin and also to eliminate as completely as possible the sulphate of lime which results from the neutralization of the acid employed in the manufacturing process. The dextrins as has been indicated above, possess the property of preventing the crystallization of dextrose or glucose in the saccharic juices that results from the saccharification of starch. Thus it follows that if the process is carried out in such a manner that an effort is made to retain a certain amount of dextrin in the sugar juices, it follows that a product will be obtained which will remain liquid indefinitely. The product that is obtained in this manner is known as glucose syrup.

There are various grades of these syrups, some of which can be drawn out into threads and others just so thick that a hydrometer cannot sink in it. Some glucose syrups are as concentrated as 44 degrees Be and also fall between the limits of 30 to 32 degrees Be. The manufacture of the syrup is a process which can be stopped at any desirable stage in order to obtain a product which will have the requisite properties. There is not nearly so much difficulty in making the glucose syrup as there is in making the crystalline glucose product. As a general rule the end of the process of making glucose syrup is indicated by the fact that the mass in the kettle will not give the characteristic blue color with iodine. The product is of course not completely saccharified at this point but contains a considerable proportion of dextrins. It is really unimportant as to just how far the starch decomposition is pushed as long as there is sufficient dextrin in the glucose syrup to keep it from crystallizing. Nevertheless it must not be thought that the process can be carried out in a haphazard manner for if a certain amount of supervision is not exercised a syrup will be obtained which will crystallize. It should also be pointed out that when the proportion of dextrin in the syrup is just sufficient or little more than sufficient to prevent crystallization, while the glucose syrup will not crystallize at once, on standing for some time it will deposit crystals. It is also bad to have a syrup which contains starch in the soluble form, for then it will be difficult to filter the syrup and a cloudy product is obtained which is undesirable for many reasons.

In neutralizing the acid remaining after saccharification, great care must be taken to see that it is entirely removed. The author acknowledges the use of information contained in this article as derived from an article on this subject in "Revue de Chimie Industrielle," 1926.

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Bichromate of soda and potash.	23911	Zurich, Switzerland	Agency
Casein.	23890	Yokohama, Japan	Agency
Casein.	23910	Kerava, Finland	Agency
Casein.	23972	Buenos Aires, Argentina.	Agency
Chemicals.	23925	Pernambuco, Brazil	Agency
Chemicals and colors	23908	Copenhagen, Denmark	Agency
Colors and flavors, food	23900	Sofia, Bulgaria	Purchase
Dye, hair	23973	Munich, Germany	Purchase
Dynamite.	23907	Lima, Peru	Agency
Laboratory supplies, chemical.	23956	Mannheim, Germany	Agency
Match making chemicals	23935	Tegucigalpa, Honduras.	Purchase
Oils, essential	23975	Baden Germany	Purchase
Paints.	23909	Copenhagen, Denmark	Agency
Paints and varnishes	23989	Bogota, Colombia	Agency
Rosin.	23976	Baden, Germany	Purchase
Sulphur finely ground	23906	Hamburg, Germany	Purchase
Turpentine and tar	23914	Cologne, Germany	Agency
Barber supplies	24128	Regina, Canada	Purchase
Medical preparations, plasters, etc.	24123	Mexico City, Mexico	Agency
Medicines, prepared, and pharmaceutical preparations.	24 95	London, England	Agency
Medicine, prepared, and toilet preparations	24184	Durkheim, Germany	Purchase
Medicines, proprietary	24094	Kuwait, Persian Gulf	Purchase
Pharmaceutical products and specialties	24093	Saloniki, Greece	Agency
Carbon black, uncompressed.	24019	London, England	Purchase
Chemicals.	24017	Vancouver, Canada	Agency
Chemicals, dyes, and intermediates.	24047	Madura, South India	Purchase
Dyes.	24060	Tegucigalpa, Honduras	Purchase
Fish meal	24030	Sao Paulo, Brazil	Purchase
Fish meal	24033	Hamburg, Germany	Agency
Fish meal	24034	Hamburg, Germany	Agency
Paints.	24016	Montevideo, Uruguay	Agency
Rosin	24018	Hamburg, Germany	Purchase
Rosin, 40 to 50 barrels monthly.	24013	Hamburg, Germany	Purchase
Wax, carnauba	240 9	London, England	Purchase
Carbolic acid, chlorate of potash, alcohol	24388	Kobe, Japan	Agency
Chemicals.	24319	Copenhagen, Denmark	Agency
Fish meal	24414	Hamburg, Germany	Agency
Glue	24388	Kobe. Japan	Agency
Plaster of Paris, rosin, turpentine.	24320	Sydney, Australia	Agency
Rosin.	24388	Kobe, Japan	Agency
Cosmetics	24243	Prague, Czechoslovakia	Agency
Drugs.	24194	Vancouver, Canada	Agency
Drugs, medicinal and toilet preparations, and perfumes.	21238	Tientsin, China	Purchase
Medical and toilet preparations.	24236	Wellington, New Zealand.	Agency
Medical and toilet preparations.	24242	Dresden, Germany	Agency
Pharmaceutical and toilet preparations.	24239	Vancouver, Canada	Purchase
Pyroxylin plastics	24242	Dresden, Germany	Agency
Toilet preparations	24210	Bahrein, Persian Gulf	Purchase
Acetic acid, peroxide sodium, g. salt, formic acid, aniline dyes, etc.	24240	Chefoo, China	Purchase
Boiler compounds and cleaning agents.	24273	Munich, Germany	Purchase
Chemicals.	24259	Vancouver, Canada	Purchase
Chemicals, industrial	24242	Dresden, Germany	Agency
Chemicals, industrial	24258	Stockholm, Sweden	Purchase
Chemicals, industrial, and electrochemical specialties.	24217	Berlin, Germany	Purchase
Chemical specialties	24273	Munich, Germany	Purchase
Coloring matter for butter	24233	Riga, Latvia	Purchase
Fish meal	24269	Hamburg Germany	Purchase
Fish meal and whale guano.	24246	Hamburg, Germany	Agency
Paints.	24273	Munich, Germany	Purchase
Phosphorus, chloride of potash, and steric acid.	24276	Colima, Mexico	Purchase
Rosin.	24241	Calcutta, India	Purchase
Rosin.	24258	Stockholm, Sweden	Purchase

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CHEMISTRY A PROFESSION

(Continued from page 366)

unproductive of results. Subsequently and not until the seventeenth century did the influence of Paracelsus cease to dominate. Paracelsus had established the doctrine that, "The use of chemistry is not to prepare gold but to make medicine." Because of this Paracelsian heritage, a chemist's ability has, even until recently, been judged, by the masses, to be limited to the same empiricism which characterizes elementary pharmacy.

There is another cogent fact. With no intention of minimizing the value and necessity of specialization—such as characterizes the professional researcher in a definite branch of chemistry—one must note with approval certain trends of the past decade. Notably, there has been a tendency in industry to seek, encourage, develop, and in many ways appreciate the services of broad gauge, rather than narrowly adept experts in science and engineering.

Speaking personally, many of us have been pleased to note that certain outstanding chemical leaders of today are not only experts in laboratory research, but have a general engineering training and ability which adapts them for industrial management. Moreover, they oftimes possess a liberality of education and experience which lends effectiveness in the administration of executive duties and—success and inspiration in their leadership of men!

In conclusion, it is well to remember that the stipend of most routine laboratory workers, whether they be chemists, physicists, biologists, or metallurgists, has been, and probably ever will be, small. The broad gauge worker in science however, has little need to fear that his services will fail to receive concrete appreciation from American industrial directorates. Especially vitalizing also, is the realization that chemists and chemical engineers of today can receive a broad education. They can enjoy a reasonable degree of breadth without suffering in thorough specialization. A chemist, like many other mortals, can "take all knowledge for his province," and by doing so judiciously, can reap a rich reward—and be a better chemist.—"The Indicator."

CHANGE IN PAR

U. S. Rubber Reclaiming Co., New York, 140,000 shares, of which 30 000 are $100 each; 120,000 common, no par, reduced to 318,400, of which 80,000 are $25 each; 134,400 common, no par.

CAPITAL INCREASES

Seneca Textile Corp., New York; $500,000 to $1,000,000.

Hydro United Tire Corp., Pottstown, Pa.; $1,500,000 to $1,750,000.

Bernuth, Lembpke Co., Manhattan; $200,000 to $1,000,000.

Elliott Paint Co., Buffalo, N. Y.; $50,000 to $ 00,000.

Electric Bond & Share Co., Schenectady, N. Y.; $50,000 to $100,000.

Rayart Dyers, New York; $20,000; cleaning and dyeing; J. Weintraub, L. R. Gilbert.

Whitehouse Paint Co., Queens, N. Y.; $5,000; G. H. Tilson, F. W. Bisgood, C. Ripley.

Avolin Laboratories, Inc., Newark, N. J.; $100,000; chemicals; Sadie Hausman, Sarah D. Seiler, Murray Mate.

Metal & Ore Corp., Manhattan, 1,000 to 1,500 shares, of which 1,000 are $100 each, 500 common, no par.

Reliable Globe Textile Corp., Manhattan, $50,000 to $100,000.

Gramercy Textile Painting Co., Manhattan, 50 shares, $100 each; to 300,000 shares $1 each.

Acoma Textile Mills, Brooklyn, N. Y., $50,000 to $100,000.

Hilo Varnish Co., Brooklyn, N. Y., $600,000 to $1,000,000.

Coral Chemical Co., Buffalo, N. Y.; $60,000 to $200,000.

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GRINDING CHEMICALS

During the course of manufacture of most chemical products, the operation most universally met with is grinding. Raw materials, in many instances, must be first reduced to a state of fine division before they even enter the process of conversion. This is especially true of that great class of chemicals known as inorganic, or heavy chemicals. In metallurgical operation it becomes necessary to crush hard, rock-like ores: whereas in the paint industry the success of the finished material is dependent upon it being in a finely powdered form.

It is a long jump from the type of grinding mill to which Samson was chained, to the giant crushers of today which will demolish a five-foot rock. However man's means for grinding many and varied materials have more nearly kept pace with his needs in this important operation than in many others. There can be found among the machines of today, one that will meet the requirements of most any grinding problem that arises and one that will perform the work simply and economically.

Grinding machines are divided into three general classes, according to the work they do, as follows: crushing and coarse grinding; fine grinding, to powders; grinding materials in paste form. Each will be taken up in turn, but owing to the space allotted, only mention can be made of some of each class.

Crushing and Coarse Grinding

In this class, rock and ore grinding are the principal materials and for this work two types of machines are almost exclusively used. They are the jaw type and the gyratory, modifications of the jaw type being the Blake and the Dodge crushers.

The jaw machines are adjustable by set screws to a comparatively fine or coarse product and will crush the hardest materials. Their principal working parts are two jaws, one moveable and one rigid, the moveable jaw hinged at one end, the other end being fastened through a cam and shaft to a heavy fly-wheel. Through the cam, the moveable jaw opens and closes on the fixed jaw with great crushing power.

In the gyratory the working principle is different. These machines consist of a central pillar shaft, fixed at its upper end and provided with a means of gyration at the lower. On this shaft is fixed a renewable crushing head in the shape of a frustum of an upright cone. The whole head gyrates inside of an inverted conical concave, the concave being lined with renewable wearing plates. This type machine is very efficient and delivers a material of a more uniform size than most others.

There are a number of different makes of these general type machines on the market and a choice should not be made without broad investigation. In many cases, some manufacturer will have a slight modification to a general type machine which makes that machine more adaptable to the particular grinding problem in hand.

It sometimes happens that a material is desired slightly finer than received from the first crushing machine or breakers, but still not pulverized, ranging from about 10 to 40 mesh. This may be accomplished by a number of machines, but usually some special modification of the swing-hammer, roll or ball tube mill type is used.

Grinding To Fine Powder

Where a material is desired of about 100 mesh or over, such machines as the rolls mills, ring-rool mills, chilean, grinding pans, grinding discs and ball and tube mills are used. This kind of grinding is the most expensive to accomplish as it takes a great amount of energy

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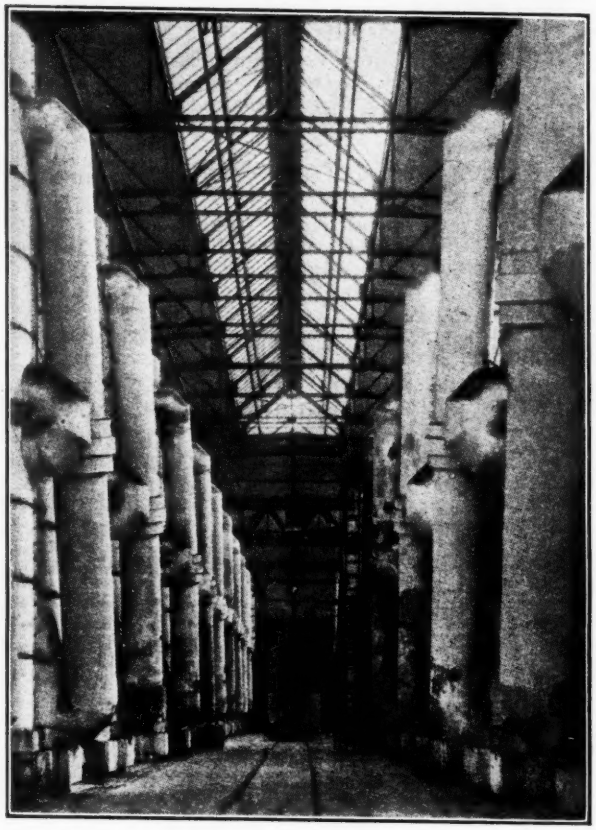
NITROGEN

(Continued from page 359)

The following table sums up the situation as between these three different processes:

Process	Plant 192	Output 1926	Capacity
Arc Process	6	40,000	45,000
Cyanamid Process	25	175,000	325,000
Ammonia Process	26	400,000	600,000

These figures are approximate, but they are based on the best information available, and except for the capacity of the ammonia process, a most difficult figure due to continued, rapid construction of new plants and additions, may be taken as closely accurate.



Water gas hydrogen plant

The headquarters of the cyanamide process is Germany where four plants (Piesteritz, Trostberg, Knapsak, and Waldshut) produce about 60,000 tons, or some eighty per cent. of their capacity. This nitrogen goes directly to fer-

(Continued on page 428)

Dipridyl oil, a new compound formed by extracting an oil from pyridine and combining this oil with sodium, is poisonous to plant lice and forms an effective rival for nicotine which thus far has been the only effective weapon against nicotine. Entomologists at the Bureau of Entomology have conducted experiments which show that dipridyl oil may be even more effective than nicotine in the control of some insects. While large scale production has not been fully investigated, it is believed that it can be made as cheaply as nicotine and may even serve to lower the price of nicotine.

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ALCOHOL, AMMONIA AND SULFATE

(Continued from page 362)

pound is deposited.. The exact nature of this compound has not been established. It is believed to be a nitro compound or a peroxide, but it is known to be violently explosive and a method must be developed for its elimination before the process can be carried out in safety. The possibility of such a method is indicated by the solubility of the explosive compound in sulphuric acid, and experiments in which the sulphuric acid is brought into contact with the liquefied ethylene, instead of the gaseous olefine are being proceeded with. It will be remembered that during the war, the ethylene-alcohol process was tried out in this country at the Skinningrove Iron and Steel Works, but was abandoned as being uneconomical, and in the Report of the Departmental Committee on Power Alcohol, published, last year, a definitely unfavourable opinion on the process was expressed, the chief grounds being the cost of re-concentrating the diluted sulphuric acid. What the Committee appears to have overlooked is the possibility of using the diluted sulphuric acid in the production of ammonium sulphate. This is the method adopted at the Bethune works, and the results of further experience gained there will be awaited with interest."

"Metallic Soaps and Driers," by Ralph Wechsler, appears in "Paint, Oil and Chemical Review," Feb. 3, 1927.

"Cost of Foreign Rayon" in United States and the primary cost of rayon yarn imported into Canada during eight months of 1926 and countries of origin are shown in "Canadian Textile Journal," Feb. 3, 1927.

"New Solvents and Their Specific Uses," particularly alcohol, are reviewed in "Chemist and Druggist" (London), Jan. 22, 1927.

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to bring it about. Consequently it has received more attention and there are more modifications of its general type machines on the market than any other.

The type most widely used for pulverization is the tube mill. In general this mill consists of a steel tube of varying diameter and length revolving about its horizontal axis. Inside there are placed a large number of iron balls or pebbles which grind the material to a powder as they tumble, roll or slide against it as the tube revolves. It originated in the cement industry where an extremely fine product is required. Coal is generally pulverized by it, as well as ores for flotation and cyaniding.

However, pulverizing problems vary greatly in every plant and and machinery should be selected for the particular work in the plant it is to be used. A ball mill is very satisfactory in making cement, but another type machine entirely is required for pulverizing phosphate rock in a fertilizer plant.

Grinding In Paste Form

For fine grinding of comparatively soft materials in the wet, or dry state, stone type mills are the most commonly used. Pigments and dry colors are usually reduced in this way. Though modified greatly, the principle of these mills is the same as that of the old buhr-stone flour mills. Some of them are also water cooled to regulate heat generated during the grinding process. Other modifications grind under water and most of them can be regulated for fineness.

Miscellaneous Grinding

Some products require other treatment in grinding than accomplished by the general type of mills described. Such products as lithographic inks, colors in varnish, chocolate, and pasty materials in general can be ground by roller mills. The grinding parts in these type mills are rollers revolving at different speeds.

Seeds and drugs present a still different problem and are sometimes ground in machines called chasers. These machines consist of a stone or steel bed on which one or two rollers or "travelers" rotate. Just in front of the rollers, a scraper arm travels and brings the material under the heavy rollers. The "chaser" is also used for mixing in a semi-dry state. The working principle of this machine may be traced back to the old treadmills of antiquity.

(Continued from page 368)

and basic facts which, for the untrained, do not exist. This does not mean that such facts are complex or hard to understand. Generally, this is not the case. It simply means that most men are completely ignorant of the basic principles which underlie the familiar, taken-for-granted phenomena which are the staff of our daily life. —"Printers Ink."

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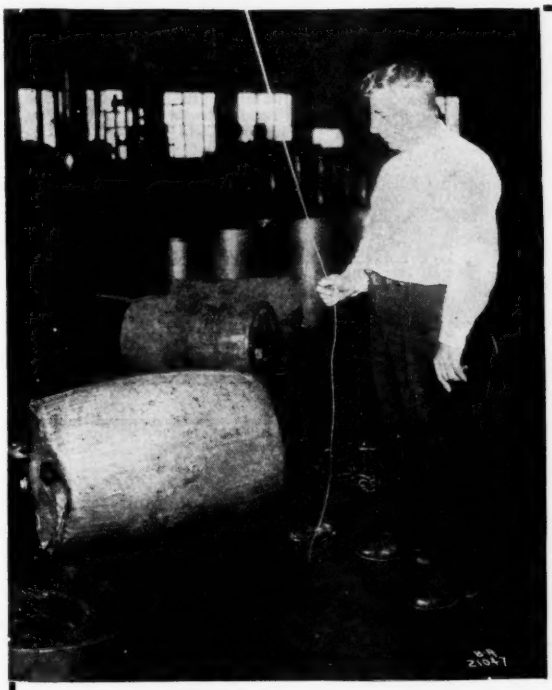

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tilizer uses in the cyanamide form; but cyanides are an important item.

About 16,000 tons of cyanamide nitrogen are being turned out in five plants in France at Lannemezan, Marignac, Bellegarde, Brignoud and Modane; but three other plants are reported shut down and those running are only operating at about forty per cent. Half capacity is the average production at four plants in Italy, two in Jugoslavia, two in Sweden, one each in Roumania, Poland, Czechoslovakia, and Norway. Full capacity is reported at the cyanamide plants in Japan (25,000 tons at Osaka, Hokkaido, and Fushan) and at the American owned plant with a 25,000 ton output on the Canadian side of Niagara Falls, which is producing not only cyanamide fertilizer, but also cyanides for metallurgical and insecticidal uses, and ammonia. Muscle Shoals has a capacity of 40,000 tons of nitrogen; but has never operated commercially.

Coming now to the ammonia process, we find a radically different situation, and in almost every important country we have additions to existing plants projected and entirely new units under construction.

Again Germany leads. The two Haber-Bosch plants of the I. G., at Oppau and Merseburg, are operating at capacity of 125,000 and 275,000 tons respectively, and during 1927 extensions are to be made to raise the total to 500,000 tons. At Billingham, England the Haber plant of the Synthetic Ammonia and Nitrates Ldt. is turning out 15,000 tons and will be immediately enlarged to 50,000 tons output, with still further expansions planned. The United Alkali Co. have under construction at Widnes a 3,000 ton Casale plant. In France the largest plant, the Bethune, operating the Claude process, has a present capacity of 5,000 tons which is being trebled. Four other plants, with

(Continued on page 430)

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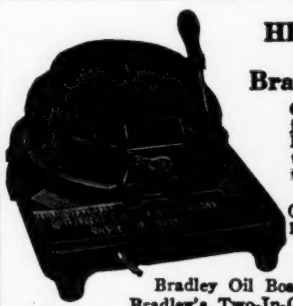

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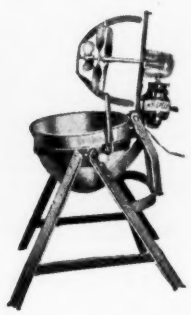

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a total capacity of from 10-12,000 tons per year are in production, and eight others, including the French Government unit at Toulouse, 57,000 tons, and a 15,000 ton plant at Toulon are all being built to operate the Casale process.

In Italy six plants, two of them of the Montecatini fertilizer interests, are producing some 40-45,000 tons and two new ones are already building while additions are being made to a third. Belgium, Spain, have each two synthetic ammonia plants; Japan has four (two operating and two building); Sweden, Poland, Czechoslovakia, and Russia have one each under construction. A small Casale plant is producing at Viege, Switzerland.

American Ammonia Output

In the United States the largest air nitrogen plant is at Syracuse, where the Allied interests are operating a modified Haber process of 7.500 tons capacity. Two plants at Niagara Falls, Mathieson Alkali Works, 3,000 tons and the Roessler & Hasslacher, 850 tons, and the 850 ton Seattle plant of the Pacific Nitrogen Co. are all reported to be producing at capacity. The Niagara Ammonia Co. plant at Niagara Falls, 7,000 tons by the Casale process, has but recently closed down and the Lazote plant in West Virginia, 7,000 tons, a modified Claude, has not yet fairly come into commercial production. The latest Richmond in the field is the Commercial Solvents Corp. at Peoria, where they have erected a unit to use the by-product hydrogen from their butanol fermentation. The capacity is said to be slightly in excess of 4,000 tons; but commercial operation has not begun. The Allied interests have recently purchased Hopewell, and announced that at this tidewater Virginia site they will erect the largest synthetic ammonia plant in the country. Avowedly, however, these plans are in the future.

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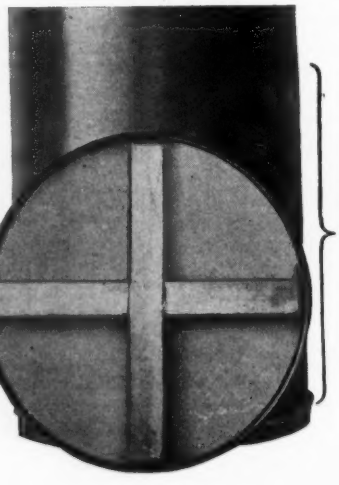

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Local Market Conditions

CHICAGO

Chemical business conditions in the Chicago district are and have been only fair for the past few weeks. The most active items on a generally quiet market being glycerine, oleic acid, and naphthaline. A reduction of 2c to 3c lb on glycerine was the leading price change since last reviewed. Collections are good, but the market in general shows little life.

BOSTON

A study of the chemical situation in the New England territory over the past month reveals a very quiet market in most chemical items. Prices on all items in this territory are generally weak due to slow business. Denatured alcohol particularly, is very weak with inquiry very limited, owing to seasonal let down. Collections are slow.

DETROIT

A considerable improvement in business conditions in the Detroit district has been noted in recent weeks. Quite a few of the automobile factories are working full time and some of them are reported as working night shifts in certain departments, which fact has a very favorable bearing on the chemical market. As concerns the actual movement of chemicals the volume has been fair but price changes have been few over the month and not of enough importance to warrant comment. Collections continue very slow.

KANSAS CITY

General business conditions in this territory are fairly good and are showing improvement over the early weeks of the year. Many lines, other than the chemical, are complaining, though the paint industry is opening up due to favorable weather conditions earlier than was expected. Chemical purchases are in small amounts and more than ever on a hand to mouth basis. Items particularly active at this time are castor oil and charcoal and those items particularly affiliated with the live stock industry that go

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Local Market Conditions

into stock powders. Reductions in the price of turpentine were the only price changes of note in the period under survey though at the moment sellers are not pressing for business and offers are not large. Collections in the Kansas City district are fair.

ST. LOUIS

Characterized as fair, the chemical business in the St. Louis territory is in smaller volume than was the case last month when business was very good. Together with the falling off in business much unemployment has been noted. Spray and other insecticides are beginning to move in line with the annual seasonal demand and are the most active items on the entire chemical list. A ½c lb decline is the most important price change of the past few weeks, with most other items holding firm.

BUFFALO

General industrial business has been a little quiet during the latter part of February but a steady improvement has been noticed during the early part of March. Paint manufacturers and jobbers report business a little below normal. Buying of shellac has been restricted and buyers of turpentine and rosin have been holding off from commitments due to the prevailing weak markets. The general chemical business is moving in a routine manner. Heavy chemicals are moving in fair volume and items such as barium, potash, calcium and soda products are being well withdrawn on contract. Sulfur business is nominal. Inquiry on alcohol is rather light for the season, due primarily to the mild weather and buying is very routine. Some concerns are making slight concessions to obtain orders. Indications are for a good Spring business that should be well under way within a week or so. Collections are a little below the average.

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Local Market Conditions

CLEVELAND

Business in the Cleveland district during the month of February showed considerable improvement over the latter part of January and December. Steel plants are steadily increasing their output and the paint and varnish factories are becoming very active. Several of these are starting the manufacture of lacquers and those already in the business report a big demand for this product. Early in February the linseed oil market was very dull but later in the month there was a good demand for futures to August and considerable large business was consummated. Chinawood oil has been very active for the past month on an advancing market and sizeable sales have been made to dealers and consumers. Buyers in this territory have been disturbed because of the situation in China, particularly as the market today seems on the point of another drastic rise. Alcohol seems weak due to large stocks in jobbers hands and the adverse weather conditions. C. P. glycerine is selling at 27c lb for spot delivery. Toluol is very firm with benzol and solvent naphtha at same prices prevailing for the past two months.

PHILADELPHIA

Market conditions in Philadelphia and district are in fairly good condition, and most items continue firm with few big reductions and no extreme advances. Castor oil is in good demand and the market has been advancing steadily. Nitrate of soda is also in good demand and seems to be maintaining the same sale that it has for the past month or so. Oxalic acid is in slight demand and the inquiry for denatured alcohol is slumping off. Acetone seems to be in fairly good demand and insecticides, particularly copper sulfate, which is extremely firm are in good position. Caustic potash is in fair demand. Collections are a little above the average, that is, they are in better shape than has been the case for some time. Orders seem to be increasing in size and all told business for the future looks fairly encouraging.

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[Catalogs & Bulletins]

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Laboratory Apparatus. Six-page folder showing different makes furnaces, condensers, etc., also price list. Palo Co.

Modern Filtration Methods in the Petroleum Industry. Bulletin giving a general description of contact process, plant, equipment, etc. 29 pp. United Filters Corp.

Monarch Spray Nozzles. Eight-page booklet containing table of capacities and dimensions, also other information. Monarch Manufacturing Works.

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"The A B C of Hydrogen Ion Control" is the title of nearly 80 pages published by La Motte Chemical Products Co., producing materials and equipment for colorimetric determination of hydrogen iron concentration and for water analysis.

Revolvators, Elevators, Lifters, Stackers, Piling Machines and Tiering Machines. Illustrated leaflet, 4 pp. Revolvator Co., Jersey City, N. J.

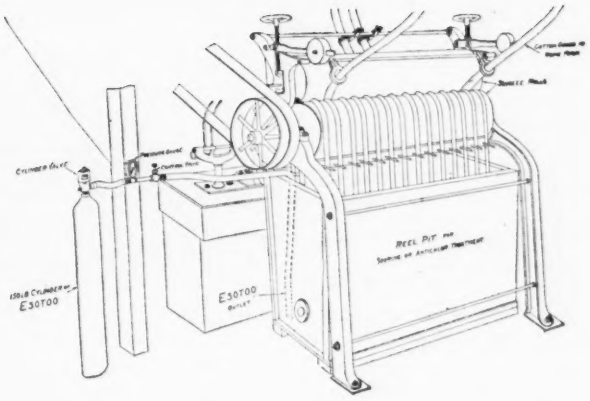
Modern Paint Making, 24 pp., 6 x 9 in., illustrated. Patterson Foundry & Machine Co.

New Mills for Old relating to Motor driven pebble mills, 4 pp., illustrated, Patterson Foundry & Machine Co.

Spiral Stairs. Illustrated bulletin describing iron spiral stairways. 8 pp. Duvinage Spiral Stair Co., 1200 Bush st., Baltimore.

Strainers. Illustrates and describes various types of twin strainers for removing solid matter from water and various liquids. Two separate compartments permit cleaning without interrupting operation. Single strainers. 36 pp. Elliott Co., Jeanette, Pa.

Vacuum Pumps. Illustrates and describes in detail Chicago Pneumatic Dry Vacuum Pumps with modifications for low and high vacua. 20 pp. Chicago Pneumatic Tool Co., Chicago Pneumatic Bldg., Chicago.



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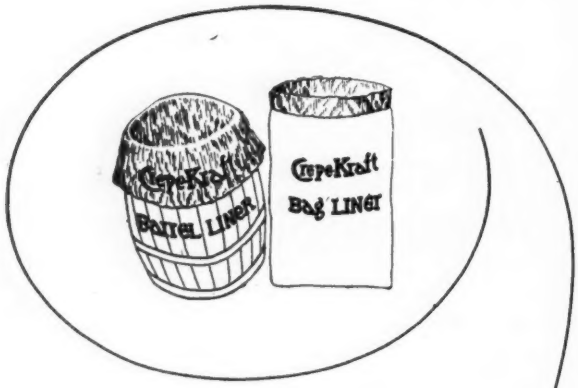

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Warner Chemical Co., New York City .....Cover 2
Wiarda & Co., Inc., John C., Brooklyn, N. Y. 420
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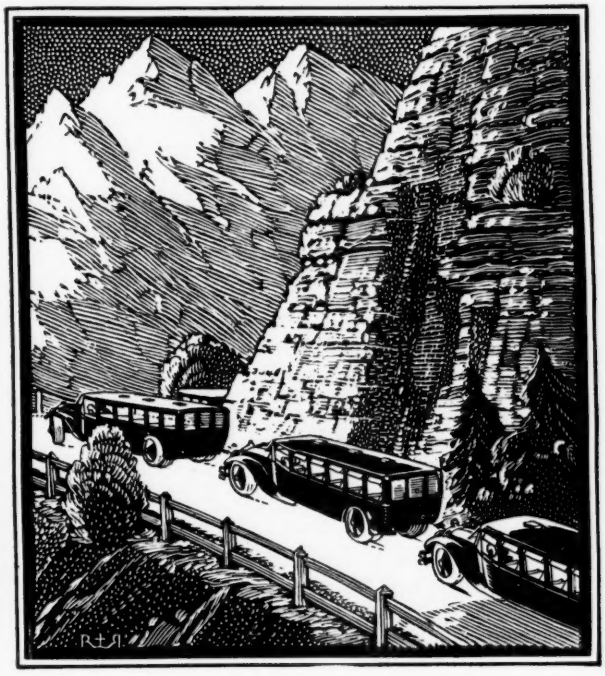
Bought *by telephone* $360,000 worth of busses



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